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New York Medical Journal

INCORPORATING THE

Philadelphia Medical Journal and The Medical News

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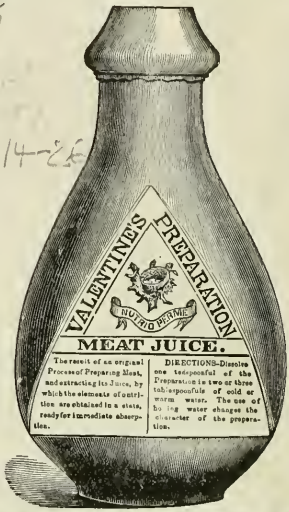

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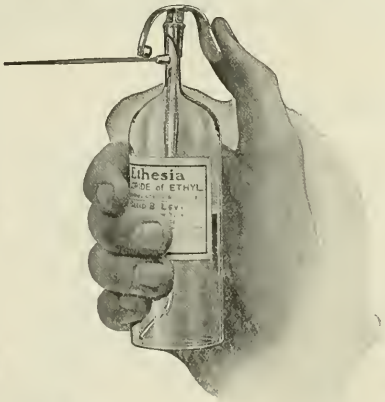

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New York Medical Journal

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A Weekly Review of Medicine, Established 1843.

VOL. XCVII, No. 14. NEW YORK, APRIL 5, 1913. WHOLE No. 1792.

Original Communications.

AN ADVENTURE IN PRACTICE.*

BY JAMES G. MUMFORD, M. D.,
Clifton Springs, N. Y.

The custom prevails among us of prefacing frequently a scientific paper by a perfunctory and more or less accurate account of historical events leading up to the subject of discussion. And so when I come to the reflections which I shall lay before you this evening, I find that I can best make them lucid and definite by introductory words which lead up to a discussion of the present state of medical practice.

No one will deny that the conditions of practice to-day are unsatisfactory; that the great subject of medicine—study, research, and practice—is sadly in need of an efficiency expert. And yet there was a time, I believe, when those who professed to cultivate medicine were more nearly efficient, or were more nearly on the track of efficiency than are we to-day.

The pundits are continually referring us to the ancient Greeks. Now, the ancient Greeks, we need not remind ourselves, were an alert and subtle folk, keenly alive to their own interests, but wise in this, that they perceived their own interests to be bound up closely with the interests of all their people. While individualistic, they were endowed with breadth of vision and an apprehension of the value of collective action. They failed eventually and effectively to become one great nation, but that is another story. So the development of medical research and practice among those ancient people followed lines so interesting that it is worth our trouble for a moment to think of them. We recollect the fact that the followers of medicine in the preHippocratic days and after were called Asclepiadæ. As with the members of medieval guilds, they followed their profession from family habit. Moreover, the Greek physicians did not scatter themselves loosely and solitary over the country, each man struggling how least he might express his incapacity; but they gathered into communities for cooperative practice. One reads, for example, of the schools of Athens, of Cos, of Cnidos, and the rest. The fashion was for families of physicians to live together for generations in those communities, which indeed have no parallel in modern life. The central architectural feature of the establishment may have been a fine temple or a hospital. About this great building were grouped schools, libraries, and academic groves. In the neighborhood were all the paraphernalia of organized community life—sometimes even large towns and cities arose. But the leading thought was medicine—study, research, healing—and the worship of the gods. There generation after generation, men were born and lived and died in an atmosphere of science. They grew up to their job. From the beginning they were trained in science and cognate studies. They had experience of the gymnasium and the university. They had access to the great literary collections of their predecessors. They were led gently and tactfully into the paths of philosophy and knowledge. Such men became accomplished practitioners, luminous and careful writers, enthusiasts for research. In the course of something like three hundred years, they seem to have developed an extraordinary educational system. Among them, too, one would find the same restless curiosity, the same eagerness, the same search after news and after truth that marks us to-day. They realized present limitations; they looked to a wider knowledge beyond their own borders; in youth they became travellers; wherever learning had raised its head, there their representatives sought it. The *Wanderlust* was quite as common among them as among us. From Athens to the islands of the sea, to Syria and Persia, to Arabia, to Egypt, their young men travelled, learning and giving forth; and in the end they returned to the home university. This meant a wide culture and a generous progress.

The Greek people realized the value of these things, just as they realized the value of other branches and types of knowledge. Those great centres of healing, that is, university hospitals, as we might call them, were sought out by the thronging sick; patients gathered in such institutions, because they knew that in them they would find intelligent cooperation in the study of disease, and intelligent, long tried, and efficient means for combating it.

One might discourse through many chapters on the advantages of the old Greek method. Dozens of thoughts arise; the satisfaction of friendly competition, unembittered by greed; the ambition for scientific research and study, in itself lovely; the daily and constant friendly discussion among experts variously trained; the constant circulation of new knowledge; the recurring opportunity for clinical tests; the peaceful advantage of dealing with patients, friendly, grouped, docile, confident.

Such was the era and such were the conditions which produced Hippocrates and his great pupils.

*Address read before the Rochester Academy of Medicine, February 5, 1913.

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Toward the end of the classic period, such were the conditions that prevailed in Alexandria. The best of the great Roman writers with their minute culture had these benefits—independent individualism associated with progressive collectivism.

It is needless to rehearse the shipwreck of science, the destruction of effectiveness, the death of collectivism, the slow rise of a futile and jealous individualism which marked the medicine of the succeeding centuries. We are wont to think of those years between the sixth century and the thirteenth century as contemptible in science, and indeed they were so among the western peoples. Conception of collectivism, however, had not disappeared entirely among the scholars of the thirteenth century, who gathered up and perpetuated in manly fashion ancient thought and new ambition, through the foundations which are known to us as the medieval Italian schools. It is not fair to group those people as mere monks and barbers; the monks and barbers represented the crude and scattered practitioners of the time. But beginning with the thirteenth century, and persisting through the *Renaissance*, through the so called revival of learning, and through the generations of modern men, gradually there developed new methods and democratic ideas and again the meaning of science. A study of the course of science with its sporadic advances and its humiliating retreats during the past five hundred years is of profound interest to the philosophic observer. I think that the two predominating features in it all are the gradual and increasing and insistent hungering after truth, and the growth of the democratic conception of the value of individual effort as dominant. Perhaps the days of John Hunter and of Bichat illustrate best for us the culminating point of that era. For those great men actually conceived the possibility themselves of recasting and rewriting the whole of biological truth. Through the generations which preceded them, and in their day even, medicine was continually afflicted with disheartening human rows. There were rival schools, so called; countless hypotheses; unfulfilled theories; ignorant assumptions in practice; and empiricism rampant. Through such mental attitudes and miseries there came about a separation of interests; the wide and unnatural division between medicine and surgery was accomplished. Then came the still more monstrous division between students of theory and practitioners, so that doubtless it was necessary that such men as Hunter and Bichat and Virchow and the others were needed to demonstrate how even in the greatest minds there can be no encyclopedia of knowledge.

We have now come down almost to modern times; and with the growth of the new spirit of research and the new accuracy of practice, we see a division of effort among many specialists. With the development of research and of the scientific method there arose legitimate claims to exact knowledge, but there arose also the deplorable terms "practical man" and "scientific man," terms foolishly invented and inanely perverted.

Within the memory of most of us now practising, and in middle life, the *present* situation has developed. Let me briefly recall to you its salient features: A restless and omnivorous searching after facts; a wide dissemination of the scientific spirit; increasing facility with and distribution of the tools of research; the reorganizing and perfecting of great hospital clinics; the founding and developing of laboratories; the applying of theoretical knowledge to practical endeavor; the astonishing development of preventive medicine; the incessant activity of men working along lines continually more and more specialized; the eager study of comparative medicine, and the adaptation of such general biological knowledge to special cases and conditions; the gradual realization that much of this work is incoordinated, and that these great power houses are not being turned to their highest possible efficiency. Along with such efforts and conceptions we see a growing interest and appreciation of our problems on the part of State and civil governments; a gradual interference on the part of the State; increased activity in works of public sanitation and hygiene; effective work upon these lines; the struggle against and the elimination of great epidemic diseases—smallpox, yellow fever, tuberculosis, poliomyelitis, and other scourges of the past; earnest and worldwide efforts of late years towards coordination and cooperation; the increasing recognition of the value of public meetings, of the gatherings of medical men, of congresses, national and international; the enormous development of the scientific press and the amazing distribution of general knowledge. These thoughts are commonplace enough; they are matters of everyday observation, and through evolution they must be leading toward constant and eventual betterment.

One asks one's self then, at times, what does it all mean? Toward what are medical progress and practice moving? Is mankind the better for them; is mankind getting the best out of them? Are we bringing the benefits of modern knowledge to the people? Are we fairly and honestly playing the game? Are we the saviors that should come, or do we look for another? It seems as though in some fashion the people are dissatisfied. Collectivism and socialism are terms which ring pleasantly in many ears. Jealous persons are invoking the aid of the State. There are strong and insistent claims for public medicine, such as recently arose in Great Britain through the surprising new Insurance Act, incorporated in the so called Lloyd George Bill, while in opposition was arrayed almost unanimously the force of the medical profession acting through the British Medical Association.

The significance of these recent tendencies and accomplishments is far deeper than superficial criticism admits. Scientific men seem to be in a state almost of panic through their resentment of State interference with these intellectual problems, and for two reasons: because they fear that such interference will cripple individual and personal ambition and endeavor; and, secondly, because to the average man it seems to threaten his own personal position and his own pecuniary rewards. Neither those who advocate governmental guardianship of scientific pursuits with its resulting collective efficiency, nor those who insist upon unrestricted individualism—neither group has all the logic and all the reason on its side. There is no question

that at present, even with State aid and with State supported laboratories, State investigations, and State distributions of therapeutic material, there is no question that at present the masses of our people, estimated at eighty per cent., still fail to secure their rights and to receive the full benefit of modern scientific medicine.

These are matters which have long and deeply concerned me, as they must concern every thoughtful scientific man; and so it was with peculiar interest that I, as representing the Massachusetts General Hospital, received an invitation some three years ago to visit a western city in order to discuss with the trustees and staff of a large projected hospital there, their plans for equipping, launching, and conducting their institution. Some half dozen other hospital men from various places met with us, and for a long afternoon we discussed in elaborate detail and in a conventional manner the new enterprise. At last our friend, Doctor Finney, of Baltimore, arose with the exclamation that in his judgment, we were missing the main point of the discussion; that we were permitting the trustees to overlook a unique and important opportunity. He continued in a strain not altogether unfamiliar to us, and somewhat in the following fashion:

For what is your hospital primarily intended? Obviously for the care of the sick. But what sick? The country is full of hospitals, but those hospitals don't seem to meet all of our needs, and you plan to add one more to the old collection. Two groups of patients—the well-to-do and the poor—now get the benefits of our hospitals with their scientific equipments and care. These patients represent about twenty per cent. of our people. In large measure, and especially for surgery, they are helped by our present hospitals, but the vast majority, the great middle class, fail to receive the full benefits of modern, scientific medicine.

What is the usual course, when sick, with members of our three groups—the rich, the middle class, the poor? A rich man consults his family physician; he is told perhaps that he has an obscure and serious disease. He is sent to a comfortable private hospital. He sees sundry consultants—an internist, a neurologist, a surgeon, an ophthalmologist. Special studies are made of his blood and his secretions; he has x ray examinations. Special and unusual treatments are given. He is investigated through all the aids at our command, and he pays large and proportionate fees. Perhaps before a definite diagnosis is reached, the rich patient expends hundreds of dollars. At the other end of the scale is the poor man. When ill, he goes to a hospital dispensary. If his ailment is not simple and readily understood, he too is sent into a hospital ward; but it is in one of our great, highly organized and equipped municipal hospitals—free or nearly free to the poor. There our patient finds for nothing the same elaborate care and treatment as that for which his rich brother paid out his hundreds.

But the man of the middle class—how does he fare? He must live and support his family, perhaps, on $800 or $1,000 a year. He has little laid by; he must not abandon his wage earning; much less can he pay out dollars to a private hospital, and yet his self respect will not allow him to become a charity patient. We have all watched sadly the struggles of such unhappy people; we have done what we could to help them, and that is little enough. The usual course with such a sick man is that he must throw himself on the care of his overburdened family physician, and that physician alone and mostly unaided must do what he can for his charge. No one man can specialize in everything, no one man can bring to the problem all the known aids of science. The fault is not that of the individual physician; it is that of the profession and the community. We have not yet learned the secret of practical and efficient cooperation.

So then my advice is that you still further increase your handsome endowment; that you build and equip a hospital to be run, not on the ordinary cooperative plan, but somewhat as a great university is run—dependent in part on the small fees of beneficiaries, and in part on invested funds and on the gifts of friends; for mark you, the patients must all pay fees—such fees as suit their incomes. And observe further—in my belief it will not be very long before such a hospital will support itself; for the fees paid in will not be uniform, but as in the case of a physician in private practice, the hospital will, in time, obtain payments more and more in proportion to the circumstances and the means of the individual patient.

So much for Doctor Finney. I believe that these statements deeply impressed those trustees. At least they seemed to take them much to heart; but of the present condition of their enterprise I regret to say I know no more.

I myself went home from that meeting with a conviction that much remained to be done; and during the next two years that conviction would not permit me to be idle. Indeed there arose among a little group of us in Boston the ambition to establish some such cooperative hospital as that advocated by Doctor Finney, but on modest lines. Dr. R. C. Cabot, Doctor Goldthwait, Dr. F. T. Murphy, and I held several meetings and discussed plans. We went so far even as to inspect a suitable building in the heart of the city and to interest certain financiers. But for the time fate was against us. We are all busy and overburdened men. Other imperative obligations pressed upon us. Then Doctor Murphy was called to a chair of surgery in St. Louis, while I myself became for a time the victim of ill health, and was obliged largely to limit my work. Having nothing better to do I occupied myself in the writing of a couple of books, in which among other casual topics I discussed some such plan of cooperative hospital practice as that which I have here suggested. While so employed, and stirred by the lassitude of an unaccustomed leisure, an opportunity came my way which I shall briefly rehearse to you under the title *An Adventure in Practice:*

I was asked to take charge of a large general sanatorium. Now the word sanatorium has not always been entirely attractive to medical ears. Betimes we think of such institutions as centres of "faddism," of hydropathy, of electromountebankery, of hysterical dietaries, and other therapeutic eccentricities; of disregard for sound diagnosis and scientific medicine, and of a somewhat pernicious commercial activity. I learned, however, that the institution in question is not of that order. My immediate predecessor there was a well known internist, formerly of the Johns Hopkins staff, who now holds an important chair in a university of the middle west. The sanatorium is not conducted for profit. There is no stock company, nor are there dividends to be paid. The institution was founded, and for more than fifty years until his death, was conducted by a physician of liberal views and remarkable vision. In considerable part his purpose was to care for, at minimum charge, or without charge, the great class of professional people who have broken down in the struggle of life—physicians, clergymen, missionaries, teachers, and their families. Incidentally, and in conjunction with this work, he built up a very strong and remunerative clientèle. He developed a dignified and imposing physical plant—with extensive grounds, substantial

buildings, and a large and profitable farm. Under him and his successors the staff was strengthened, laboratories were added, an elaborate equipment for physical therapeutics was installed, and a small but excellent surgical hospital was organized. But best of all, I think, the ancient and erroneous idea of a sanatorium as a mere rest house for psychoneurotic invalids gradually was corrected; the frequent physical basis for what was once regarded as purely functional disease became recognized; and steps were taken toward building up a genuine hospital as well as a sanatorium. Moreover, I learned that the institution is now in the hands of a responsible and progressive board of trustees, whose earnest wish is to conduct it on approved modern lines—for the benefit of the patients and for the advancement of medicine. There is another and interesting feature of this place—a feature which has an important bearing on the psychical reeducation of the sick, whatever their ailment. I refer to a certain religious atmosphere and practice, as adjuncts in the care of invalids, gathered in large numbers in an isolated country community. I believe that the value of well directed religious influences has long been recognized—influences leading to a tempered endurance of illness, a sane philosophy, and a reasonable outlook on the chances of life and death. The activities of a well balanced, restrained, and earnest clergyman are not only of high value for their immediate effect on the sick, but for the general, permeating atmosphere of service and uplift which they lend to a hospital as a whole. Of these things I am convinced by their practice, and I believe all experienced physicians will agree in this conviction.

I have said that one of my leading objects of professional interest for years has been the bringing of good scientific medicine through cooperation to that large group who do not now receive our best. The people to whom I refer may well be persons of education and social distinction—that may be their misfortune; especially are they found among the professional classes. Here seemed an opportunity for strengthening a good work and developing a new enterprise. Reduced to its lowest and fundamental terms, I found at my hand a great and varied clinic, and the means withal to carry it on; not an endowed institution—that would have destroyed my leading principle—but an institution supported by a legitimate business or professional income.

I agreed to undertake the enterprise, or "the adventure," as I have called it; but I insisted with the trustees upon the inevitable importance of two elements for success: The strengthening of the staff by constant additions of high grade men of the first class; and the sharing by such men in the increasing pecuniary rewards, should we succeed; in other words, brains and rising incomes.

Let me say a few words regarding these two elements, and the possibility and reasonableness of securing them. In a well conducted, well equipped sanatorium hospital such as this, the ambitious man shall find much that a distinguished university hospital might offer him, and certain things in addition. The success of St. Mary's, at Rochester, Minnesota, has proved that competent and reliable men can build up a clinic in unpromising places. The location counts little. In such a clinic the first class man finds work to his hand, his patients are assembled under one roof, there is the advantage of a constant, personal, well arranged, and continuous observation and study of cases, easily accessible and inexpensive laboratories, x ray departments, physical therapeutic appliances, and similar accessories; time, opportunity, and advantages for research and publication without undue friction; congenial and sympathetic companionship in his pursuits; accessible and interested consultants on the staff—for the success of one implies the success of all—competition unembittered by rivalry; and an atmosphere of work, progress, and enthusiasm in a rare degree both for the clinic and the laboratory. One misses the stimulus of a great city community, the distinction of association with famous institutions, and perhaps with many eminent men; but one asks, wherein lies a real distinction which is not personal and self acquired? I myself have intimate knowledge of these things. If a man be truly worthy, he himself brings distinction to the institution, not the institution to him. I admit, however, there is at first the isolation and the severance from great university ideals and the larger group of distinguished men. Well, then, it remains for you, my friends, who take up the remoter life, so to illuminate it that the larger world shall seek you out.

Then there is the other important question of financial success in this adventure of cooperative hospital practice; for financial success is important to most men. We must educate our children and we must provide against sickness and old age. Just here there enters into the problem an interesting feature or advantage in cooperative practice; you work on a rising salary or profit sharing basis, and so your case differs from that of the private practitioner; your income goes on even in the case of absence or of illness. I assure you that is often a great consolation. In the case of such an institution as I am describing—an institution which is founded, financed, and conducted much as is a college, dependent for its support on fees, and to some small extent on the rare gifts of friends and supporters—in such an institution there should be a minimum salary with which the individual physician starts. Subsequent increase in salary in each case must depend on the physician's efficiency and value to the institution. The medical director and trustees must be the judges of his increased value, and must assign to him his increase of income in proportion to the rising net income of the institution. The sanatorium hospital I am describing receives between three thousand and four thousand patients a year; its income from patients is large, and the mere business of conducting it is a serious task. The business administration is, as it should be, in the hands of a highly qualified manager or treasurer, who relieves entirely the medical staff of all business responsibility.

Such in general outline was the character of the institution to which I was called, and such were some of the propositions and conditions under which I accepted it. Let me close the story with a few words on the nature of the enterprise as I have now seen it for four months, and the lines on

which I hope to watch it develop. The one leading feature which has most interested me, and will interest you is the nature of the clinic and the work we are doing.

The clinic is large, as I have said, running up into the thousands, even in bad years. Certain features familiar to private practice are found there. The number of patients varies with the seasons, and the types of cases vary also. I think I may safely assert that most of the patients are sent to us because they cannot well or successfully be cared for at home. Now home conditions vary, the financial and climatic circumstances of patients vary, and available medical care varies. In this institution patients get a great deal at small outlay: board and lodging, ordinary treatment and nursing, and a physician's care, but not free surgery. Many persons come to us and from all parts of the world to escape bad climatic conditions; overworked country doctors send us patients that would not be sent by a city physician with his special aids to practice. City doctors send us patients to get them away from town, or from overwhelming home or business surroundings. To me and my associates, especially to us newcomers, one of the most gratifying and surprising features of the work is the richness and variety of the clinic. You think of a sanatorium hospital as a rest cure, as a refuge for neurotic invalids. I write these words in mid-January when our numbers are at their lowest. Our cards show one hundred and fifty-eight patients to be now under treatment. The diagnoses are: Psychasthenia, 17; neurasthenia, 9; enteroptosis, 18; gastroptosis, 4; cancer of the lip and face, 2; Graves's disease, 5; flat foot, 3; cancer of breast, 2; hemorrhoids, 2; gallduct disease, 7; myoma uteri, 4; uterine version, 2; nephritis, 5; genitourinary tuberculosis, 2; hydronephrosis, 2; duodenal ulcer, 3; bronchitis, 11; acute appendicitis, 2; sacroiliac disease, 11; and arteriosclerosis, epilepsy, pernicious anemia, cancer of the stomach, fistula in ano, tenosynovitis, opium habit, subcoracoid bursitis, paralysis agitans, double tuberculosis of hip, ruptured perineum, hallux valgus, pneumonia, luxation of cervical vertebræ, cancer of uterus, osteomyelitis of femur, fractured patella, intestinal adhesions (Lane kink), inguinal hernia, and brain tumor, 1 each; 158 in all.

This group of cases shows a variety. Their study keeps our internists working almost feverishly, our laboratory humming, our x ray plant in constant use, and our operating room fully occupied. Frankly I ask you, is not this a quite different picture of a sanatorium from that we have commonly held? Yet there is no going backward even if we would. A sanatorium is but a special type of hospital. When it has attained its growth it must take in all varieties of cases and it must equip itself for their care. It truly becomes a medical clearing house in a sense. If it aids the seemingly hopeless, then more and more will the hopeful also seek it. Always it must expand and perfect its equipment for the study and treatment of chronic disease especially; but definitions and clinical conceptions of disease change with the advance of science. It is coming about that the modern sanatorium more and more is to be regarded as a hospital for the treatment of all difficult cases, while one of its departments at least must always be devoted to the ancient and familiar function of rest cure.

An efficient sanatorium draws patients from great distances. That circumstance adds to the interest of the sanatorium life. Since taking up this work I have seen patients—and in great numbers—from the world over, America and Europe, Asia, Africa, and the Indies. In one day there consulted me a colonial archbishop, missionaries from Natal, Burmah, and Turkey, a bishop from Japan, and an official from Manila. These are small matters. My story of the enterprise is already too long; but I trust I have made clear to you all—practical and experienced men—certain facts which daily become more clear to myself.

Here is a new field for highly trained physicians; a good living with increasing returns; cooperation in practice no longer a dream, but a stimulating fact; service to all classes of the community above the very poor; while the untilled soil shows abundance of work for the workers. More and more I believe may proper and satisfying study and practice thus become accessible, profitable, and efficient.

"VIENNA CAUSTIC."

By Augustus Maverick, M. D.,
San Antonio, Texas.

Between seventy and eighty years ago a little band of American physicians journeyed over to Paris to study the methods of the great master, Louis. They were all hard workers, ambitious, and anxious to learn. Back to America they brought with them the spirit of the great master, a knowledge of how to study disease, and also, as Osler tells us, "a Gallic refinement and culture which stamped them, one and all, as unusual men." During the years that followed, American medicine was to hear of many of these men; of Jackson, Oliver Wendell Holmes, Bowditch, Shattuck, Warren, and Fisher, of Boston; Norris, Gerhard, Pennock, Stewardson, Alfred Stillé, Mütter, Stewart, William Pepper, Gibson, Biddle, Tucker, Clymer, Johnson, Ruschenburger, and Peace, of Philadelphia; and many others from elsewhere.[1]

The magic of the East beckons to the young physician of to-day as it always did. He learns that many of the shining lights in modern American medicine once studied under some big European physician. He thrills with yearning as he reads of the triumphant invasion of the students of Louis. With more or less sacrifice he may scrape together the means to go himself to the land of the chosen few. As a rule he wants postgraduate work in general medicine. Where will he go? To London? "No, it is not foreign enough." To Paris? "No, there are not enough big men in Paris to-day." Munich, Leipzig, Breslau, Jena, and Halle have certain advantages, but there are places larger. Berlin and Vienna—ah, the magic of these words! It is hard to decide between the

[1] William Osler, Alfred Stillé, *University of Pennsylvania Medical Bulletin*, 1912.

two. They both have their good men and plenty of material—there is little choice here. In Berlin, however, the hospitals are scattered about the city, causing a loss of time in going from one to the other throughout the day. In Vienna practically everything is crowded together within a few squares. Here one can attend a medical lecture from 8 to 9 o'clock, a laboratory course from 9 to 11, a skin clinic from 11 to 12, a surgical operation from 1 to 3, and so on until the day is ended. To do the most work in general medicine in a given time Vienna is the ideal place. Yes, to Vienna he will go. The dream has come true. Already he sees himself working intimately among a little group of earnest countrymen, the coming masters of American medicine, discussing disease, playing with the diagnostic signs, dragging the causal agents into the limelight. He prepares himself for the light of superior knowledge which will soon flood the obscure corners of his cortex cerebri. He sees himself returning home, the bearer of clinical Europe's message to America, one of the champions of future medicine. The culture he has received from living abroad will always cling about him like a halo, making people stop and listen when he talks. On the boat he refreshes his memory with a book on diagnosis, so that his present ignorance will not startle those with whom he will soon mingle.

At last, Vienna! He stops temporarily at a hotel on the Ringstrasse, which Baedeker tells him is near the hospital—the Allgemeines Krankenhaus. The day is well advanced, but he cannot wait to visit the field of action. He strolls up Alserstrasse past the old Votive church, several cafés, and a soldiers' barracks. The loungers at the tables before the cafés, the bright uniforms of the many army officers, the broad, grotesque trolley poles on the street cars—all these lend a foreign air which fills him with delight. Finally, the old hospital itself with its rows of low, dirty, stone buildings and its court yards filled with convalescent patients, just as he had pictured it. He stops a man looking very much like an American and asks the way to the seat of the American Medical Association of Vienna. The association is in its new headquarters up the next street, he is told, but if he will stop at the Café Klinik on the way he will find many of the fellows. He does not like the word "fellows," nor the fancy vest this American wears—these do not smack of learning.

Alas, how many fond hopes have been shattered by that step into the Café Klinik! Can this be the little band of American physicians who are to carve their names in medical history? This fellow with the big cigar and loud voice, talking of last night's experience at some gay music hall; this one in shirt sleeves, with cue in hand, who claims the title of brilliard champion? There is the odor of spirits and tobacco, the rattle of glasses and bottles, the clink of billiard balls, and the humming of ragtime. It is good to step from the streets of sleepy Vienna into a corner of America, where there are real Americans, wearing real American clothes and using real American slang. It dispenses with a blueness of spirit, but it does not add to a grayness of cerebrum. Is this medical Vienna, where so many famous men first saw the light? No, this is just the majority of American postgraduate students who waste their time and money and sometimes fool their friends at home by "studying abroad." "That doctor studied in Vienna, he must be pretty bright." Yes, but what did he study? Here is one disciple of Æsculapius who studied diseases of the eyeball three hours a week and the peculiarities of the billiard ball six hours a day—he will soon return as an eye specialist. Here is another who is taking up genito-urinary diseases, but who hunts for gonococci, not in the hospital, but in cafés and music halls. Here is a third who will soon open an office in a large American city as an expert on stomach troubles, but whose study has consisted chiefly in the effects of Hungarian goulash and Munich beer upon his own stomach. Here are some more who do not maintain that they are studying anything—they are "just looking around, getting used to the language and customs before beginning." Many of these do not know exactly what they want. Then there is the busy practitioner who rushes through Vienna with exactly six weeks to spare. He expects to gulp down a dose of foreign medicine as he would a cup of coffee and a fried egg. Mental indigestion is the result. He would do better at home, keeping up with his medical journals.

The majority have very little knowledge of the German language. In eye, ear, nose, and throat work there are a few good lecturers who use English, but in other lines a knowledge of German is absolutely necessary to obtain the best. Many Americans fool themselves into attending second rate men who talk second rate English. Some think that the smattering of German they learned at school will help them through, but it does not go far. Others sit through lectures, ignorant of what the lecturer is talking about, but waiting patiently for the time when the German language will suddenly dawn upon them. "How are you getting along with your skin work?" queried a friend of a man who was making a specialty of dermatology. "Pretty fair," came the reply; "Zumbusch showed us several cases of *Haut* to-day, but I have'nt had a chance to look up the English name for *Haut*." "Why you idiot, *Haut* means skin."

One of the most pathetic sequelæ of postgraduate work in Vienna is the *Zeugniss*. The *Zeugniss* is a certificate showing that the holder has taken so many medical courses in the Royal and Imperial University of Vienna. A *Zeugniss* may be printed on plain paper or real imitation sheepskin, depending upon what the lucky one wishes to pay. He takes it around to the instructors whose work he has attended and has them sign their names. It makes no difference how many times he attended the instructor's lectures; in fact (and this is confidential), he can haul it around to instructors he has never seen before. All Americans look alike to the German teachers; they all sign the *Zeugniss* without a quiver. Possibly the Germans have a deeper sense of humor than we suspect. Finally the dean himself attaches his name and with his little rubber stamp impresses in red the two faced royal bird of Austria. There it hangs on the office wall at home, throwing off its radiumlike rays to warm the enthusiasm of faithful patients. "The doctor must be a smart man, look, he has a diploma

from a foreign college. Maybe it was given to him last year because of that address he made before the Mothers' Club, which the morning paper wrote so much about." As a bit of real elegance there is only one flaw in the *Zeugniss*. This is the heading, University of Vienna, which reads *Universität zu Wien*, and unfortunately few patients know that *Wien* is the German name for Vienna. Possibly the American Medical Association of Vienna can induce the dean to have the *Zeugniss* printed in English, translating the word *Zeugniss* into "diploma," of course, and not "certificate"; there is no dignity in the word certificate; patients might think their doctor had framed his insurance policy or his certificate of vaccination.

Practically all Americans join the American Medical Association of Vienna, which has now moved its headquarters from the smoky atmosphere of the Café Klinik to its own club rooms. The association has worked hard to systematize the postgraduate courses in the hospitals. This systematizing does not make the courses themselves any better, but it proves a great convenience to the newcomer. The association meets one night a week. The meeting begins with an address by some representative of local talent, like Marburg Lauber, Kapsammer, Falta, Holzknecht, or occasionally more important men, as Lorenz, von Noorden, or the retired Politzer. After this, scientific transactions and business items of interest to the association are discussed by its members. Medical societies, like true love, never hit on all six cylinders at one time. In the ordinary county society, however, the members remaining very much the same, the heretics, from death, exhaustion, or "sore heads," gradually drop out, leaving a survival of the fittest (or unfittest, depending on the point of view) in an interval bordering on peace and calm. In Vienna, on the other hand, as soon as the dissenters fall away they are reenforced by new ones from the States. The man from Minnesota has altogether different views of how to run the association from the man from Missouri; the man from Chicago thinks the one from Philadelphia ought to be locked up. A few years ago there was a fierce feud between two factors of Chicago talent which caused much excitement and a few fisticuff encounters among those concerned, but which brought the men from other States into more friendly relations. "Chicago men might be all right in Chicago," some one said, "but they certainly don't belong over here." Anyone who has attended a Turkish-Bulgarian Peace Conference or served a term as president of Mexico will little realize how sweet and peaceful the world really is until he has visited a "scientific" meeting of the American Medical Association of Vienna.

The newcomer in Vienna is apt to be disappointed in the lack of sincerity shown by his American confrères. But what about the medical work itself? The immense Allgemeines Krankenhaus, always crowded, and the new Jubilee Hospital across the street, whose completed buildings have already been filled; and also the Polyklinik, the Institut Obersteiner, the Lupus Home, the Rothschildspital, and the St. Anna Kinderspital, all near at hand—certainly the material is abundant. There are plenty of good men also; one has only to mention the names of Zuckerkandl and Hochstetter in anatomy; Weichselbaum in pathology; von Noorden, Ortner, and Neusser in medicine; Obersteiner and Chvostek in nervous diseases; Eiselberg, Hochenegess, and Lorenz in surgery; Schauta in obstetrics; Fuchs in eye work; Chiari in nose and throat diseases; Escherich in pediatrics; and Finger and Riehl in diseases of the skin.[2] Here is the cream of Vienna medicine. How many of these lecture to American students? None. Sad but true. Any one can mingle with the Vienna undergraduates and attend the clinics of these professors, but what he hears is purely elementary, intended only for the ears of beginners. From the upper tiers of seats one can see numerous medical cases and surgical operations, but the view is not the best even though one follows the example of many Austrian students and uses a pair of field glasses.

The postgraduate work for Americans, therefore, falls into the hands of minor professors, docents, and assistants. The courses to be given are previously posted on the bulletin board of the association. As a rule, each course lasts one month, one hour a day, costs ten dollars, and is open to ten men. Those who want the course sign their names to the list, which is taken down from the bulletin board by the American promoter when filled. Lists for the best courses are almost filled a week or a month beforehand. The newcomer must therefore wait a month or two before he can take certain subjects, although he may have but a short time to stay. In very popular courses, like Kovacs's in internal medicine or Ghon's in morbid anatomy (taking twenty men), it may be months before he sees an opening. Other courses are not so popular and a promoter must hustle around and get the list filled or almost filled so that the course will be given. Such a course may be just what the promoter himself wishes and which he may attend free because of his promoting. Newcomers are thus often induced to take courses which they find useless. Most of the courses given by the minor professors and docents (in German) are excellent —there is much to see and no end of information for those who want to learn. No one is disappointed with Ghon, Marburg, Stoerk, Schlesinger, Kovacs, Pötzl, Clarmont, Wertheim, Wintersteiner, Neumann, Knöpfelmacher, Zumbusch, and others.[3] What they have to say and show is as good as one meets in the best postgraduate courses in America, and the foreign atmosphere which goes with them probably gives them an advantage like that which mineral water has over water from the hydrant. Many of the courses given by the assistants and some of the docents, however, are very elementary and disappointing; these men have the material, but they do not know how to show it. One who goes to Vienna expecting to perform operations or do much actual handling of patients will be disappointed. It is always possible to examine patients during a lecture, or just before, or just after a lecture, and sometimes to tap a chest or pass a sound. To do more one must obtain the position of ex-

[2]There have been some changes in this line up since the writer left Vienna; for example, von Pirquet now heads the pediatric clinic, and Neusser has recently died.

[3]Minor changes have probably been made in this list since the writer left Vienna.

terne in one of the clinics; this demands a good knowledge of German and is open only to extremely few Americans. Externes, however, do not have the opportunities of the ordinary interne in one of our own hospitals. One going to Vienna expecting to learn surgery or therapeutic technic of any kind will be disappointed. For pathology and diagnosis go to Austria or Germany, but for treatment, surgical or medical, continue your journey east until you strike America.

The American going to medical Vienna who finds most of his companions out for a good time, and who discovers that the work is really no better than he can obtain at home, will usually console himself with having developed the culture and refinement which are averred to go with a foreign education. What is the mysterious source of this foreign polish which he takes home with him? First of all, Vienna is a stupid old place, about as lively as Philadelphia on Easter Sunday. There are two or three music halls and cafés which are wicked enough to stay open all night. There is even an "American bar," where one sits on a stool and drinks tea served by a barmaid. At the very worst, the spirochete and gonococcus are not more cultured in Vienna than they are in Kansas City. Vienna is a fair example of how the Germans have always tried to imitate the French, but never succeeded. There is the Ringstrasse (a copy of the boulevards), within which the old part of the city is situated. There are spots of beauty on the Ringstrasse, but they are limited. There are museums and picture galleries to visit, and the royal palace which is a faded yellow affair, apparently an imitation of a Parisian railway station. There are the operas where one can hear good singing, but see most unattractive actresses. Viennese actresses, like many birds, sacrifice in plumage what they gain in song. There is always a new Viennese musical comedy on the boards, but it has to be taken to America to be acted properly.

Café life in Vienna (another effort to copy Paris) consists in sitting on the sidewalk at a little iron table and sipping lukewarm coffee from a glass or, if you are out for a lark, a mixture of wine and seltzer water. If it is in the morning you are given the paper to read, an evil smelling little sheet with blurred print and astigmatic, Turnerlike illustrations, that is, provided you do not look like an American, otherwise the head waiter will invariably hand you the *Illustrated London News*. In the evening the idea is to stare at everybody that sits near you. The Viennese are great starers; you can stare back, wink your eye, make faces, or even throw pieces of bread rolled into pills at them, but they stare right on without a quiver. The ambition of all Viennese men is to look thin and anemic and wear American shoes. The women evidently try to grow as large as possible. Vienna is noted for its beautiful horses and women, but the horses have the advantage. The café waiters have the honesty of Spanish pirates. They are poor mathematicians, but always make mistakes in their own favor when adding up their checks. They charge for each roll you take from the bread plate and often for your serviette if you use such a luxury. Butter and drinking water must be especially asked for, causing nearby Austrians to chuckle at such strange American tastes. At the end of the meal there are three waiters, sometimes four, to tip, the head waiter who collects the money, the regular waiter who pulls away your chair, and the wine boy who holds your hat. Tipping is prolific, but not very expensive in the Austrian capital. One must even tip the janitor four cents to open the pension door at night and the street car conductor one half cent each ride.

Vienna has the reputation of being one of the most expensive cities of Europe in which to live. Food is cheaper than in America if one keeps house and does not demand American articles, like Heinz's baked beans which are thirty cents a can, and Uneeda biscuits which sell at twenty cents a box. Hotel and pension life costs about the same as in America considering what you get. Only one pension out of thirty has a bathroom. The Viennese has the same fondness for water and open windows as spermatazoa have for acid. Clothes are not cheap if one wants what one is accustomed to wear at home. A glance through the attractive shop windows of the Graben and Kärntnerstrasse (where foreigners go), or the less attractive ones of Mariahilferstrasse (where the Viennese themselves shop), will convince one of this. Collars and shirts and other articles are all measured in the metric system, making it necessary for one to be measured all over again. One can buy a tailor made imitation of an American suit of a first class tailor for twenty dollars. The material is good, but the finished suit looks as if it came from the Bowery. You can go back to have it fitted fifteen times, and even let the tailor rip an old suit to pieces for making patterns, but the result is always a sad failure; you will give it to your chauffeur on returning home and dislike him for wearing it. Austrian cigars and cigarettes (sold by the government) are cheap, but you will be glad to pay double for a Henry Clay (the favorite American brand in Europe), although you may never smoke Henry Clays in America. Some long, emaciated Austrian cigars have a straw through the centre; you are meant to pull out the straw before smoking one, but the flavor is better with the straw left in. Women carrying hods of brick up a ladder, pulling dog carts, and shoveling snow from the streets are common sights in Vienna. The Viennese men are careful to take their hats off to one another, but except in the mockery of "higher society" their rudeness to women touches the American to the quick.

As it is apparently the intention of the writer of this article to be as disagreeable as possible, let him not fail to mention the most caustic product of Vienna culture, namely, the landlady. Beware of the Austrian landlady, most fiendish of evil spirits; distrust her as you would the bacillus of plague! This applies chiefly to the American who takes his family to keep house in Vienna. The following is the sad story of one American's exit from the Austrian capital; the story is a true one, as the writer has good reason to know. The American had lived two years in medical Europe, over a year of which time was spent in Vienna. He kept house in Viennese apartments neighboring the hospital. All through the stay his wife was bothered by petty thefts of food and clothing which were finally traced to the landlady. They put up with this state

of affairs as best they could, as they had heard of no other landlady of better reputation. On the eve of their departure from Vienna the landlady suddenly swamped the American with bills for numerous "extras" of most mysterious origin. So anxious was he to get away from her depressing influence that he paid everything without a struggle. One hour before the train left, with a cab waiting at the door, the landlady entered with one more bill, probably an inspiration from a fruitful night of dreams. This bill included a chair whose surface had been worn by the friction of the American's trousers and a window broken by a cake of soap, "accidentally" hurled by the landlady at the American a week previous—even the cake of soap was listed at three cents. The bill was a small one, but the American having certain antibodies of Irish extraction in his blood had an anaphylactic revolt against this final charge of the landlady's toxines. Three well nourished Austrian gentlemen friends of the landlady, waiting for their cue, then entered upon the scene and began making faces at the American. This was followed by a noise resembling overturned furniture, broken glass, and dull thumps. In the most lively part of the celebration the American's wife, in true American spirit, came to the rescue by pulling the most ambitious of the vivisectors by the hair until he cried like a pig. When the smoke finally cleared, the American's baggage had mysteriously vanished. An Austrian policeman, who stood hesitatingly across the street looking up at the house, was called over by the American, given a cigar with a straw in it, and told to get back the baggage. He took the cigar, but said the chief had given him no rules about baggage. A trip was then made to the nearest police station, where the American was informed that he had a perfect right to his own baggage, but he would have to obtain a search warrant from the mayor. As the train was to leave in twenty minutes peace negotiations were made with the enemy and a compromise restored the missing articles. The American and his family fell into the compartment of a railway carriage just as the train was leaving for Munich. Two American women were seated in the compartment and one said: "Look at that poor Austrian, he has cut himself on the neck." "Austrian, be damned!" said the American. He looked up and then smiled—it was good to be among real Americans again, even if they were only two kind hearted old ladies from St. Louis.

DEVELOPMENTAL ALEXIA.*

Two Cases of Congenital Word Blindness.

By Burton Chance, M. D.,
Philadelphia.

The rarity of congenital word blindness is my apology for wishing to give a short account of two cases that are now under my observation.

Case I. A young man of eighteen years, who has attended school since his fifth or sixth year is still unable to read, although he has advanced far in arithmetic and algebra and in geographical and historical knowledge. He has maintained in fact a degree of general intellectual progress out of all proportion to what one might expect for one who had learned only by oral teaching. He is a healthy, good natured fellow, quite ready in repartee, but very soon tires when he attempts to read. He is in only the *Second Reader*.

The letters on Snellen's and other distance cards were named with the greatest difficulty and only after many vocal attempts. The individual characters indicated nothing to him: he supposed they were the alphabet. Nevertheless, a card arranged with numerals was read properly; he divided the lines into their intervals of notation, calling them off as expressions of total sums without the slightest hesitation, even into the tens of billions. The American Ophthalmological Society's card containing fractions was deciphered with startling rapidity. Playing cards were accurately named (he is said to be quite an adept in euchre and poker) whereas the Jaeger card could be spelled out only with extreme hesitation and difficulty. In a sentence containing the words "concave," "convex," "lens," he read somewhat as follows: C-O-N. *con*, C-A-V-E, he could not say what it was: C-O-N. V-E-X, *con-leth* L-E-N-S, *leth.* M-O-R-N, *morn*, but only after repeated listenings to the sounds of his spellings. When he spells aloud all attempts are easier than when he tries to read offhand. The paragraph composed of two and three syllable words beginning with "children should be allowed to read such books, etc." had to be read, or rather spelled, three times before he could give the sense of what he had read.

The visual acuity equalled 5/5; the accommodation ranged, for type 0.50 D., from 10 to 50 cm. Ophthalmoscopically, the media were clear, the discs 7 x 8, vertically. The right disc showed a "Beard's sector," a surface formation which I have frequently noticed in the psychodeficient. An expansive venous wave appeared on the right superior vessels. The funduses were granular; connective tissue reflexes showed on the discs, and striations were well marked, though there was an early absorption conus at each temporal border. The eyes were quite emmetropic. Phorometric tests showed an exophoria of 3°. No other developmental changes were seen in either eye; nor was the head misshapen.

Colored wools were picked out and named accurately. He had a slight stammer, yet otherwise he spoke clearly, with accent and emphasis as well as understanding. He said he would like to take up a learned profession, perhaps be a doctor, yet his secret yearning was to be a plumber! (it is needless to say that I discouraged him from being false to his true self). He dislikes to sit still; he never makes an attempt to read, or quietly to pass his time. He must be doing something. He likes to work with tools and fit pipes. He can make things with pocket knives and tools. He is right handed. Sports engage him and he enters into them with the greatest enthusiasm. He could find the scores in the newspapers and could decipher their meaning so that he could independently know what was going on in the baseball and basket ball worlds. He is a "good sport" and boxes well. It was interesting to note his rendering of a time table of a railway division running through his own region. He rattled off the stations from New York to Trenton, but beyond Trenton it was a blank, and his attempts to tell the other stations were painful to him as well as to myself.

The young man had been carried along in the primary schools depending upon the good will of the teachers until he was too old to be kept with little boys; first in the public schools then in parochial schools, receiving from first one and then another extra teaching. At fourteen years of age he entered a monastic school and has since then been under the care of the Benedictines. One of the brethren has shown rare sympathy and understanding of the case; he took him to Professor Witmer's psychological clinic at the University of Pennsylvania, and it is through the courtesy of Doctor Witmer's assistants that he was brought to me for an ophthalmological study.

The family history is negative; no other member has been known to be unable to read. The mother is dead, the father and the only brother are healthy and normal. They are Irish Americans.

I recommended that the young man should be continued in the general classes where the instruction is carried on by lectures and demonstrations, and to be given special periods of twenty minute

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practice in the study of letters and words by the so called "look and say" methods. He was encouraged to commit words to memory, by writing or printing them, and to pronounce them without first orally spelling them. But he was discouraged from setting his heart on accomplishing a learned profession; on the contrary, the advantage of a manual occupation was laid before him. A note received to-day from the monastery stated that he had left the school and is now employed as a shipping clerk in a business house.

CASE II. The second case is that of a boy of nine years, the son of an intelligent American whose family history shows deaths in the second and third decades, and instances of unstable nervous vitality. This boy started to school at six years, yet he is now only in the second grade. His failure to learn to read led to his being classed among the deficients, and those of his teachers who became impatient with him declared him to be vicious. He was taken to the psychological clinic when eight years old for general study. While there it was found that disorders of his nasopharynx existed, but nothing was done for their relief until several months later, when adenoid vegetations and swollen tonsils were removed. In February, 1912, he was taken again to the clinic. At this time he was known to have had great difficulty in reading, he became confused on little words such as "but," "if," "and," "so," yet larger words, when spelled audibly, he could read after a time. He had difficulty in naming individual letters and would commonly use the wrong letter, misplacing a w for a g, for instance, "wone" for "gone." The tasks were so painful and so ununderstood that he would fling the book across the room, and yet he was an expert in mental arithmetic, and was quick in figures, the values of which he had learned quite early, though the sight of the numerals, etc., were irritating to him.

I found him to be a neat, well developed, pleasant faced boy, who took the greatest interest in what I proposed to him. He could write words of four to six letters when permitted to spell them aloud. He could read sentences only with great effort, and when he was asked to repeat the same in writing it seemed all but impossible, even after three or four attempts. When asked to write a reply to a simple question, like his mother's name, he became totally confused. Printed written words of my own seemed to convey no sense of proportion or meaning to him. He had been in his class for three terms. He was extremely restless, though of good disposition. He has been eager to be with boys, but he has not gained a commanding position among them, he became rather the drudge or general utility member of his "set." The visual acuity of each eye was 5/5 by illiterate and character signs, and the accommodation ranged from 20-40 cm. for type 0.50 D.

The eyes were well formed, slightly less than 1 D hyperopic; the discs presented the same sort of sector shaped excavations observed in the first case. There were no other abnormalities. The boy made prompt and accurate selections of the colored wools. He did not know the musical signs, yet he was fond of music. I did not attempt to take his fields of vision, as there were no symptoms pointing to defects in them. He knew the playing card signs, but did not play cards.

The boy could not be sent to a private school or have a special tutor. His family agreed to help carry out my directions toward increasing the power of his visual memory. I suggested the use of child's blocks; games of word making; sliced words; the making of a double roll or "pony" with lists of words which could be rolled so that isolated words could be brought before him. His family was urged to be patient with him, to have his case properly explained to his school teachers, as well as to his mates, so that they would not ridicule him.

He was seen again, January 11, 1913. His family and others have done what they could to help and he has gained somewhat in the past six months. He spells well vocally, but his attempts to read even lists of simple three letter words were most imperfect—t-o-e was pronounced *tod;* he could not write a reply to a question, without first speaking it and then state each word and spell it out letter by letter. His father stated that he was able to play the game of *Authors* and could call off the names necessary for the "books" with ease and accuracy (this evidently by an association of ideas, with a memory of the position of the various titles on the card). He added that his lessons were read over to him each night, and then heard the next morning. He could recite excellently, his father said, but it was discovered that while appearing to be reading off from his book he perhaps had another page than that containing his lessons.

These cases may not be considered as at all extraordinary; they have been detailed largely in obedience to Hinshelwood's dictum in reporting a "case of congenital word blindness," that it is a "duty to record every case so that the attention of the profession may be called to this condition and the mind familiarized with its characteristic features." (*Ophthalmoscope*, II, p. 399, 1904). But in addition to a plain recital of my cases, it is not easy to resist the impulse to make a few remarks on the subject, which I prefer to call "developmental alexia."

Much has been written on the subject of congenital word blindness since it was first recorded in 1896. Yet barely fifty cases have appeared in the literature, and I believe it may safely be stated that no case has been formally presented to this section in the past ten or twelve years. Swanzy did not mention it in Norris and Oliver's *System*; but it was not until about 1900 that Hinshelwood described the condition scientifically and ascribed it to a congenital defect in the visual memory centre for letters and words.

It cannot be a rare condition. I have known school fellows who never cared to read, not because of ocular discomforts and hindrances, whose knowledge of subjects gained from lectures and demonstrations, however, was nothing short of profound. I once knew a good sized boy in my own class in the intermediate department whose name was Davis, who could not spell, not even his own name, yet from our patient and sympathetic teachers he gained a degree of learning that enabled him to pass in all oral subjects; and so I might go on to tell of many instances of boys who were classed as "stupid," whose general information was great notwithstanding the fact that they could not read.

It is a rather singular fact that this well known physiological anomaly should have been sudied almost solely by ophthalmologists, rather than by the neurologists, for, clinically, none of the pure cases have been visually blind nor have the semiological details required ophthalmological exactness for their elucidation. On the contrary, it is within the province of the pedagogue that they are discovered, and it remains for the psychoneurologist to treasure and direct the strength of these defective individuals in order that they may be brought within a useful field of existence. It remains for him to define accurately just which portion of the cerebrum is affected, and by what process the disease arises.

It is hard to understand why Hinshelwood and others selected the incongruous term "word blind-

ness" for a condition in which the unfortunate subject is not at all blind, in the sense that we say a man is visually blind. He really sees the letters and the words, he can count each one, and, may be, imitate their forms with pen or pencil, but he does not know what they mean, nor can he pronounce them. Nettleship was near the truth when he said in his report of several cases (*Ophthalmic Review*, xx, p. 61, 1901) that he recalled how he used to speak of it as a "congenital want to acquire knowledge by printed signs," long before Hinshelwood collected his data and attempted to give the condition a definition. Jackson's selection of a distinguishing title is therefore reasonable, for it is "a developmental alexia" with which we have to deal (*American Journal of Medical Sciences*, May, 1906).

An analysis of the published cases shows that a great variety exists; some were "blind" for letters or for only certain letters; others were for certain words only, or, for the order of the letters in the words; while others have not been able to read words at all. I have not seen a case of complete inability to recognize letters—"literal alexia" must be rare indeed. Very few, with the advance of their intelligence, failed to learn to read arithmetical signs and figures; evidently that was because figures have complete mental values, whereas letters and even words are not entities and require therefore a context to impress their meaning. That all the cases should have been found, with two or three exceptions, in boys, and not in girls, and always in youths of British or American birth or descent, is one of the unexplained mysteries of the affection.

As I have intimated above, it is the neuropathologists who must locate the lesion for us. So far, they have offered only conjectures: whether it is a defect in the development of the centres in the region of the angular gyrus; or because it is due to an insufficiency of gray matter; or whether it is caused by an interruption in the course of the fibres through the commissure, we cannot say. Certain it is that something hinders the passage of impulses connecting the visual word memory centre and the auditory vocal memory centre.

235 South Thirteenth Street.

THE TREATMENT OF EPILEPSY WITH HYPODERMIC INJECTIONS OF CROTALIN.*

A Study of the Effect of the Venom on the Coagulability of the Blood; Report of Eighteen Cases Treated.

By Ralph H. Spangler, A. B., M. D.,
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Chief of Medical Clinic, Methodist Episcopal Hospital.

In March, 1909, I began the empirical use of hypodermic injections of rattlesnake venom for the treatment of epilepsy. Since publishing a Preliminary Report (1) and a second article, Tabulating the Report of Its Use in Thirty-six Cases (2), I have received so many letters from physicians and patients from all parts of the world that I take this opportunity to report further my experiences in the study and observation of 148 cases which I have treated with hypodermic injections of crotalin solution during the past three and a half years.

The solution which I find most satisfactory and effective has been prepared by my druggists, and consists of the dried, crystallike scales, from the evaporated venom of *Crotalus horridus* dissolved in sterile water and glycerin, to which are added a few drops of trikresol for its preservative and antiseptic effect. This sterile, antiseptic solution is put into sterilized ampoules and sealed. Each ampoule contains one dose, which is made as strong as desired by the physician, i. e., each one represents 1/200, 1/100, 1/75, etc., of a grain of the venom.

The strength of the dose must be determined for each individual. It is my practice to start with 1/200 grain and gradually increase the strength as indicated. It is important to determine the patient's susceptibility to the venom and to regulate the strength of the dose required for each individual. The idiosyncrasy is judged by the local reaction at the site of injection and the effect it has on the character and frequency of the convulsions.

It has been my practice to give the injections in the forearm, alternating from left to right, as long as a good reaction is obtained. If the reaction is inadequate, I inject above the elbow, and occasionally I have injected into the calf of the leg. It is advisable to vary the site of injection when a good reaction is not obtained.

It is best to use an all glass aseptic hypodermic syringe and a platinoiridium needle, about one and a half inch in length. The syringe is sterilized by cleansing with alcohol and boiling. The needle is heated over a Bunsen flame or boiled. After breaking off the neck of the ampoule the crotalin solution is drawn into the syringe and, after expelling the air, is ready to inject.

The site of injection is cleaned with tincture of green soap and alcohol, or touched with tincture of iodine. The needle should be well introduced into the muscles (intramuscular) at an angle of about sixty degrees and the contents of the syringe expelled slowly. After withdrawing the needle, the wound is covered with a little sterilized cotton and collodium. The dressing should be removed with alcohol or ether as soon as the part begins to swell.

The frequency with which the venom should be given varies with the character of the attacks in an individual and depends upon the length of time the local reaction lasts. It seems best to wait two or three days after the swelling and cellulitis have subsided before giving another injection. In the average case the local reaction is over by the third or fourth day, so I give injections from five to seven days apart in most cases.

In a paper (3) read before The National Association for the Study of Epilepsy and the Care and Treatment of Epileptics, at Vineland, N. J., June 3, 1912, I reviewed the chemistry of snake venom and pointed out that crotalin is a preparation obtained from the poison glands of the American rattlesnake (*Crotalus horridus*), and that because of its composition it exercises a double action upon the organism into which it is injected (4). The peptone element contained in the venom has a paralyzing

*Read before the Pennsylvania State Medical Society, Scranton, September 25, 1912.

effect on the nerves when given in large doses, while in minute doses it has a quieting effect upon the nervous system.

The other principal compound of the venom, the globulin poison, acts on the blood; in large doses, completely destroying the power of the blood to clot, in smaller doses exerting a retarding action on the inherent tendency of the blood to coagulate.

Various observations which I have made in treating epilepsy have encouraged me to look for an explanation of the unitormly good, and, at times, almost brilliant results obtained in the treatment of this disease with the crotalin solution injections. Let me cite a few well known facts of common observation to physicians who have under their care many cases of epilepsy.

If in an epileptic an acute fever or an infectious disease develops, such as pneumonia, erysipelas, typhoid or scarlet fever, as a rule all epileptic symptoms disappear during the course of the intercurrent disease. The major attacks with convulsions are absent, the minor seizures with disturbance of consciousness do not occur, and the "dreamy state" or border line symptoms are held in abeyance. Only upon recovery from the acute illness, after a longer or shorter time has elapsed, do the epileptic symptoms recur; and what may be termed the normal condition of the epileptic, i. e., frequently recurring major and minor attacks with their concomitant manifestations, becomes reestablished.

The same observation is made in cases of pregnancy. During this time no attacks occur among many epileptic women. This fact leads the laity to the delusion that marriage often cures the epileptic girl. Again, operations performed for reasons that have no bearing on the epileptic condition nearly always cause a temporary suspension of all epileptic symptoms.

On the other hand, when an operation is performed for the purpose of curing the epilepsy, such as the removal of the irritation resulting from a diseased condition of a part or when the skull is trephined to remove a pathological condition of the brain or its membrane, the patient and relatives are frequently encouraged because of the absence, at times for several months after the operation, of any epileptic attacks. Their disappointment too often is only more keenly felt when the apparent improvement is found to be only temporary, and the old condition of recurring convulsions reappears. Thus it is seen that external influences, various diseases, and at times operations which exert a distinct influence upon the quality of the blood may alter the pathological condition in a given case of epilepsy, so that the attacks disappear for some time.

Is it not possible that these conditions may be explained by the fact that through a demonstrable alteration of the blood conditions an accumulation, so to speak, of substances in the blood may act as an etiological factor of the epileptic attack?

As is well known, after operations with which there is connected much loss of blood, a strong stimulus for the formation of new blood occurs. During this period of blood formation, when a changing of all the elements in the blood is taking place, the epileptic symptoms disappear. In due course of time, however, when the quality of the blood returns to its former conditions, the epileptic attacks recur.

During an acute febrile disease or illness, during pregnancy and after operations, the composition of the blood is possibly altered to such an extent that the irritating bodies which bring about an epileptic attack, cannot be produced, or are not produced in such quantities as to cause a convulsive seizure.

Is it not possible, therefore, that the blood of epileptics may contain what we may call an epileptic toxine, which toxine accumulates more and more, from time to time, until a certain intensity is reached with increasing coagulability of the blood, and an explosion (the epileptic attack), as it were, takes place? Whether we have to do in this condition with an autointoxication which depends upon an hemogenetic or cerebrogenetic cause, is a question which needs further investigation.

Let me cite once more from observation that when an epileptic collapses as though struck by lightning, injuries frequently occur on the face, hands, or other parts of the body which are exposed to infection from dirt of all kinds. Rarely, however, will there develop inflammatory or infectious conditions from such wounds. But, on the other hand, these injuries heal very rapidly and much more rapidly than among more healthy persons. Again, severe tongue bites during a major convulsion seldom are attended by much loss of blood, notwithstanding the fact that this organ is rich in blood. May not these facts have a special significance and bear a close relation to the cause of epileptic symptoms? May not this condition point to a certain composition of the blood, especially a more rapid coagulability, and therefore a more rapid closing of the wound against external infection and hemorrhage?

During the past year I have studied the coagulability of the blood in eighteen cases of epilepsy, covering a period of six months in each case. So as to have uniformity in the results I used a standard Bogg's coagulometer and made all the tests myself. The following is a tabulated report of eighteen cases of epilepsy treated for six months (at weekly intervals) with hypodermic injections of crotalin solution. Special attention is called to the lengthening of the intervals between, and the modification of the character of the attacks as well as to the effect the venom had in gradually lengthening the coagulation time of the blood.

In studying this table it will be noted that in most of the eighteen cases, by the end of two months' treatment, and in all of these cases by the end of three months' treatment, a lengthened time of blood coagulation was produced. From a careful study of each case I also observed that in these cases when the coagulation time of the blood was taken twenty-four or forty-eight hours before an attack (whether major or minor) it was almost invariably the rule to find an increase in the clotting time of the blood. Conversely, if the coagulation time was determined from twelve to thirty-six hours after an attack, there was a corresponding increase in the clotting time.

These results are in accord with the results reported by Dr. John Turner (5) in his article published in the *Journal of Mental Sciences*, London, October, 1908, with the following conclusions:

1. The average rate of coagulation of the blood is greater in severe cases of epilepsy.

2. The rate is quickened during the period that the patient is having fits (serial epilepsy).

3. There is further quickening of the coagulation rate up to twenty-four hours before a seizure.

4. From twenty-four to forty-eight hours after a fit there is a rebound and retardation of the rate of blood coagulation.

Dr. William Alden Turner (6), in his Morrison Lectures of 1910, stated that it has been conclusively proved to his mind that rapid coagulability of the blood occurs during the twenty-four hours preceding a major seizure of epilepsy or a series of attacks.

Experimenters (7) in general agree that the blood of patients suffering from an acute infectious disease coagulates much more slowly than the blood of such patients in health. During pregnancy there has been found a decrease in the fibrinogen of the blood, with a corresponding slower coagulability. Blood depletion after an operation is attended by a decreased clotting time.

Without referring to the histological and chemical changes in the blood, without taking into account that the blood, the most complicated and interesting fluid in the living organism, has many other secrets hidden in it, may we not concede to this fluid portion of the human body a greater importance in the origin of epilepsy, than has heretofore been demonstrated?

That one effect of crotalin consists in decreasing the coagulability of the blood through the globulin-like element contained in it seems undoubtedly determined from the results noted in the above tabulated cases.

It seems therefore possible to accurately observe the effect of crotalin on the blood of epileptics. We are able to determine that:

1. The symptoms of epilepsy are closely related to certain changes in the composition of the blood.

2. It is possible to influence the composition of the blood through the hypodermic administration of crotalin solution.

3. We possess in crotalin a therapeutic means which can influence advantageously the altered condition in the blood of epileptics.

At a future time I hope to report as to the effect of the peptone poison, the other principal chemical element of snake venom, in cases of epilepsy.

The fact that crotalin decreases the coagulability of the blood and, I believe, at the same time the irri-

TABULATED REPORT OF EIGHTEEN CASES OF EPILEPSY TREATED FOR SIX MONTHS (AT WEEKLY INTERVALS) WITH HYPODERMIC INJECTIONS OF CROTALIN SOLUTION;

Noting especially the lengthening of the intervals between attacks and the modification in their character, as well as observing the effect of the treatment on the coagulability of the blood.

Case No.	Age.	Sex.	Character of attacks.	Frequency of attacks *before* using crotalin.	Frequency of attacks *after* using crotalin six months.	Clotting time of blood *before* using crotalin.	Clotting time of blood (monthly average of weekly observations) *after* giving crotalin injections at seven day intervals. First month.	Second month.	Third month.	Fourth month.	Fifth month.	Sixth month.
1	19	F.	Minor (in series)	Daily.	Series stopped. 7 to 12 days between single seizures.	3.25′	4.5′	5.1′	5.00′	5.5′	5.75′	5.75′
2	30	M.	Major and ambulatory	Two to four a wk.	One major and 2 minor in 6 mos.	3.5′	4.2′	5.00′	5.25′	4.75′	6.1′	5.75′
3	31	M.	Major	Daily for 15 mos.	Two to 9 wk. intervals.	2.25′	3.5′	3.25′	5.1′	[1]6.25′	4.25′	5.1′
4	23	M.	Major series	Series of 2 to 5 during 24 hrs. at 10 to 14 day intervals.	Character of attacks changed to minor, 4 to 8 wk. intervals.	2.5′	2.5′	4.75′	3.1′	5.5′	5.75′	5.25′
5	57	M.	Major and minor	Three to 6 wk. intervals.	One major and 2 minor in 6 mos	4.5′	5.25′	5.25′	5.5′	6.25′	5.75′	6.00′
6	23	F.	Major series	Series of 3 or more in 24 hrs. once in 5 to 7 days.	Series stopped, longest interval between single attacks 5 wks.	3.5′	4.00′	4.00′	5.25′	5.5′	5.00′	5.25′
7	26	M.	Major and minor	Series of minor followed by 1 or 2 major every 3 wks.	One minor and 1 major during first 3 mos., none during last 3 mos.	2.00′	3.00′	4.25′	5.25′	4.75′	5.5′	5.5′
8	20	M.	Major and minor	Average 3 major every 24 hrs. for 2 yrs.	No attacks for 4 mos. after third treatment, 2 minor during sixth month.	2.75′	3.25′	4.00′	5.25′	5.5′	5.25′	5.00′
9	32	M.	Major in series	Series of 3 or more, at 1 to 3 wk. intervals.	One series of 3 minor attacks and 2 single major attacks in 6 mos.	4.00′	3.5′	4.5′	5.25′	5.00′	5.75′	5.5′
10	30	F.	Major series	Series of 4 to 12 attacks during 3 to 5 days at 1 to 3 mo. intervals.	No attacks after second treatment.	3.25′	4.75′	4.25′	4.25′	5.75′	6.00′	6.00′
11	11	F.	Major and minor	Two to 3 major each wk. with daily minor in between.	Seven major during 6 mos., minor not much influenced.	3.5′	3.00′	4.25′	5.25′	5.00′	5.5′	5.75′
12	21	M.	Major and minor	Daily attacks for 5 to 6 days followed my same number of days usually with absence of attacks.	Series broken, 1 interval between major attacks of 6 wks.	1.5′	2.00′	2.25′	4.00′	3.75′	4.25′	4.5′
13	29	F.	Major and minor (automatism)	Series of major and minor with automatism manifestations at regular 3 wk. intervals.	No major attacks for 6 mos. 2 short series of minor.	3.75′	5.00′	4.25′	5.25′	5.75′	6.5′	6.5′
14	18	M.	Major and minor (series)	Series of 3 or more in 24 hrs, 2 to 3 times a wk.	Series broken, 4 major in 6 mos. Minor 2 to 4 times a wk.	2.75′	4.25′	5.00′	5.5′	5.25′	6.25′	5.5′
15	9	M.	Major (series) and minor	Series of 10 to 15 major 2 to 3 times weekly. Minor during intervals.	Single attacks at 7 to 10 day intervals. Series broken, 1 interval 2 mos. without attacks.	1.75′	2.25′	3.00′	2.5′	4.00′	5.25′	5.00′
16	44	F.	Major	Once in 3 to 4 wks.	Two attacks in 6 mos.	3.5′	5.00′	5.5′	5.25′	6.00′	5.5′	6.25′
17	24	M.	Major and minor in series	At weekly intervals had a series of 3 to 5 major with as many minor attacks in 24 hrs.	Attacks continue at 7 day intervals, but series are shorter.	3.00′	4.00′	4.5′	5.5′	5.75′	5.5′	5.5′
18	16	M.	Major	Two to three weekly.	One major in 6 mos., but a minor every 2 or 3 wks.	3.5′	4.25′	4.25′	4.75′	4.5′	5.25′	5.00′

[1]Nine weeks interval between attacks.

tability of the nervous system, may not be absolutely proved theoretically, but the practical results obtained in the above tabulated report of cases treated during the past year will, I trust, lead to a more general use of crotalin injections in treating cases of essential epilepsy.

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2035 CHESTNUT STREET.

INFECTION WITH *ENTAMŒBA TETRAGENA*.*

BY W. M. JAMES, M. D.,
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The first identification of a case of *Entamœba tetragena* in the Canal Zone was made by Dr. S. T. Darling, and reported by him to this society. In the stools of a negro patient admitted to Ancon Hospital he found the four nucleated cysts that are characteristic of this parasite. In this instance Darling reported that there was, as far as could be ascertained, no history of dysentery, and that the patient had been admitted for a disease other than dysentery. This was in September, 1911.

Some time later, a Spanish laborer, suffering severely with dysentery, was admitted to my section. The stools contained much blood and mucus, and entamœbæ were present in very great numbers. In the fresh specimens I was able to identify the eight nucleated cysts of *Entamœba coli*, and entamœbæ corresponding to the vegetative stage of this species, and also numerous entamœbæ which I took for histolytica. Specimens were sent to Doctor Darling, who expressed the opinion that a double infection with these two species was present. Slides stained with Hasting's and Giemsa's were sent to Dr. C. F. Craig, of the Army Medical School at Washington, who wrote that beside the entamœbæ corresponding to histolytica and coli, in his opinion a third was also present, which he took for tetragena. Unfortunately, no specimens from this case were wet fixed and stained with hematoxylin, but a later study of the slides resulted in the finding of two well defined four nucleated cysts, corresponding in every way to the four nucleated cysts found afterward in the stools of the patient, an account of whose infection I present.

I could not, however, otherwise identify in the same slides a third species. While my notes on the fresh slides record the finding of large, actively motile entamœbæ exactly resembling histolytica except, in some instances, for the presence of a well defined nucleus, the finding of these two cysts is all the proof I have that tetragena should be identified. Personally, however, I have no doubt that tetragena was present.

This patient made a rapid recovery under the bismuth method of treatment, and before his discharge *Entamœba coli* was again recovered from his stools. It is quite possible, in view of my recent experience with tetragena infection, that this patient was not infected with coli and histolytica, but with coli and tetragena, and that I confounded tetragena cysts with those of coli on the later examinations. At the time I was entirely unfamiliar with tetragena, and could easily have mistaken the "latent" stage of this (to which I shall refer later) for coli during convalescence. When I attempted later, with more knowledge of tetragena again to study the slides, the stain had blurred from much use and had faded, and I could recognize only the cysts to which I have referred.

The patient whose infection is the subject of this report was first admitted to Ancon Hospital, December 10, 1911, with a history of dysentery for a short time. The stools contained pus and blood and many actively motile entamœbæ, with well marked ectoplasm and endoplasm. Many of the organisms included erythrocytes, and some were literally stuffed with these. Also, a few cysts were seen. At the time I was busy with other work and gave no study to the case. I recorded a double infection with histolytica and coli, noting the latter on account of the cysts. The patient was placed on the bismuth treatment as advocated by Dr. W. E. Deeks, of this hospital. The dysenteric symptoms stopped at once, and in a few days the patient was passing formed stools with no return of his malady.

In the meantime I had received a copy of Doctor Craig's excellent treatise on the entamœbæ and read for the first time a detailed account of tetragena, according to his personal observations and those of the German school. I had already some knowledge of histolytica and coli, in fresh specimens, and in specimens stained with Hasting's and Giemsa's, after the method of Dr. S. T. Darling. This method, especially when the slides are further differentiated in sixty per cent. ammonia alcohol, as he advocates, gives very excellent and superior results for this class of stain after dry fixation. I had found out that while the bismuth treatment causes a rapid disappearance of histolytica, the drug has no permanent effect on coli. Since I thought coli were also present in this infection, salts were administered, with a view of obtaining some for study, a month after the admission of the patient.

Much to my surprise, I found the specimens thus obtained full of actively motile entamœbæ, and though many of them in the fresh specimen resembled coli, others differed from any that I had studied previously, in that the organisms, while presenting many of the characteristics of histolytica, had well defined nuclei, something that I had not observed in histolytica. Stools were sent to Doctor Darling, who identified the entamœbæ as tetragena. Numerous cysts were also present, and in a number of these I recognized four nuclei, in fresh as well as stained specimens. Neither Doctor Darling nor I could identify more than the one species in the stools.

In view of the absence of dysenteric symptoms in Doctor Darling's first case, the doubt as to the pathogenic species in the case in which I found the two cysts, and the presence in this case of so many vegetative entamœbæ in the absence of any indication of present dysentery, I was inclined to

*Read before the Canal Zone Medical Society, May 8, 1912.

believe that tetragena is perhaps a rather harmless organism, like coli, and indeed this opinion was also expressed before this society by others. The patient was discharged January 10th, a week or more after the identification of the entamœbæ, apparently fully recovered from his dysentery, as he had had no symptoms for four weeks. The entamœbæ were still present when he went out.

April 1, 1912, he returned with a history of dysentery for four days, but stated that he had had no symptoms in the interval between his discharge and the beginning of the second attack. I was ill at the time, and am indebted to Dr. H. R. Carter, Jr., for the clinical and many of the microscopical findings at the time of the second admission. As before, the stools contained much pus, blood, and mucus, and a very great number of actively motile entamœbæ, nearly all of which included erythrocytes, some of the organisms being completely filled with them. Doctor Carter, who had studied tetragena in the stools in the previous admission, recognized in many of the organisms a large and prominent nucleus, associated with the histolytica characteristics of active motility and a marked differentiation between ectoplasm and endoplasm. He, without at the time knowing the source of the specimen, identified the entamœba as tetragena. Specimens sent to the Board of Health Laboratory were reported on by Doctor Darling as "stained specimens of the entamœbæ present the characteristics of *Entamœba tetragena,* Viereck." I do not know if cysts were present on admission

Doctor Carter gave salol, ten grains, three times a day, ordered a milk diet, and within ten days the stools were again formed. Very careful examinations of the stools were made, and while no vegetative entamœbæ were found in the formed stools, they were present in very considerable numbers in the semiliquid motions following the administration of salts. Numerous cysts in all stages of development were also present.

But though the dysenteric symptoms had disappeared, the patient complained of vague abdominal distress, which, on examination, appeared to manifest itself as tenderness over the cecum and the transverse colon. Salts were administered several times to relieve constipation, and, April 30th, were given in larger doses to obtain specimens. The first stool was formed and contained cysts only, the second to the fifth were semisolid, and in them were numerous small entamœbæ, with well differentiated ectoplasm and endoplasm, but not very actively motile, and without visible nuclei. May 1st, another dose of salts was administered, and the second, third, and fourth stools on that day were almost pure mucus, heavily charged with blood. In the fourth stool, which was about half an ounce in quantity, entamœbæ were found in enormous numbers, and I counted over fifty in one field of a Zeiss 16 mm. apochromatic lens, with the No. 4 compensating ocular. These entamœbæ differed in several important points from those found in the semisolid stools of the day before, and I shall refer to the differences later.

It is not my intention to draw definite conclusions as to the pathogenicity of *Entamœba tetragena* from this one case, particularly since at the present time there is dispute as to whether this organism and that termed histolytica are the same or different species. I may add, however, that at present I have no proof that they should be classed in the same species. But I will call your attention to the reports of those who have studied tetragena in several cases. These observers, Hartmann, Prowazek, Whitmore, Craig, and others, have found *Entamœba tetragena* almost constantly associated with dysentery. Nevertheless, this organism, as far as I know, has not been identified in man before death, and at autopsy found to bear the same relation to intestinal lesions as does histolytica, although such a relation has indeed been found between tetragena and intestinal lesions in experimental infections of cats, and one case of a liver abscess in a cat, presumably caused by the experimental infection, has been recorded. But in this case, the finding of blood and mucus in considerable quantity, at a period when the patient was passing formed and normal stools, strongly indicates the presence either of localized ulcer formation or of some inflammatory process in the large bowel, probably the former.

Taken from the time of the first admission, the clinical features of this infection closely resemble those described for "chronic amebic dysentery," and also the so called "tropical dysenteries," as reported by Councilman and Lafleur, and others. An attack of acute dysentery is followed by improvement in the symptoms, with the reappearance of formed stools, and later there are similar attacks, likewise followed by remissions. Since the medication administered to the patient, on the previous admission as well as at the present time, has had no effect on the vitality of the entamœbæ, it is obvious that such improvement as has taken place is due to the milk diet and the rest in bed during the acute stage.

These facts raise the interesting query as to whether the "chronic amebic dysenteries," with their exacerbations and remissions extending over many years, which are reported from all parts of the tropical world, may not be due to infection with *Entamœba tetragena,* while the acute and rapidly fatal form of amebic dysentery may have as its etiological factor *Entamœba histolytica.* Recent reports make it very probable that in the Far East tetragent is a much more common parasite than histolytica. Or, if one believes with those who hold that there is a single species only of pathogenic entamœbæ, perhaps one may state that the variety known as tetragena is not as noxious as that known as histolytica.

It is not possible at present to predicate how frequently tetragena will be found in the Canal Zone. Since Darling's identification of the species, about ten months ago, it has been found twice only, while histolytica has been found ten times. Although I do not feel permitted to make generalizations from the clinical and therapeutical findings in this case only, I may point out that while we have had no recurrences previously in patients treated properly with bismuth in a series of over 300 cases, this infection has resisted a thorough course of the drug, despite the mildness of the clinical symptoms. Further, in many of the histolytica infections which I have followed from admission to discharge, a very marked degeneration of the entamœbæ is plainly

visible as soon as the bismuth appears in the stools, and no such effect has been noted in this tetragena infection, nor in several infections with *Entamœba coli*, in which the drug has also been tried.

As Doctor Darling will report later on the identification of the entamœbæ in this and his other case of tetragena infection, I shall note only a few points of interest in the morphology of this organism.

1. In the fresh specimens taken during the acute stage the entamœbæ resemble histolytica in every respect save one, the large and clearly visible nucleus in many of the specimens of tetragena. I have not, however, been able to distinguish between tetragenæ in this stage which do not have visible nuclei, and histolytica. In most of the Hastings and Giemsa stained specimens, however, the red staining part of the nucleus is much more prominent than in histolytica.

2. In the stage of remission, when the organisms are found in the semisolid stools after salts have been given, the entamœbæ present a much altered appearance compared with those present in blood and mucus stools. They are smaller, much less actively motile, and the nucleus is seldom visible. In stained specimens many of the organisms contain in the cytoplasm sausage shaped, or rod shaped masses. These masses persist after the cysts are formed, and disappear only when the four nuclear stage is reached. They are called chromidia, and are supposed to be derived from the chromatin of the nucleus. I do not think this is a correct supposition, because the masses take a blue stain after Romanowski methods, much denser than that of the cytoplasm, and no corresponding material is to be seen in the nucleus. In my opinion the appearance of these masses is an indication of beginning encystment, and I believe they are derived from the cytoplasm, and not from the nucleus, and further, that they do not take part in formation of the cyst nuclei, except as nutritive matter. I call his period in the life cycle of tetragena the "latent stage," because at this time the organisms are not associated with dysentery. In the latent stage tetragena may be mistaken for coli, even when the invisibility of the nucleus is given consideration, because it is not at all uncommon to find many of the latter without visible nuclei.

After wet fixation, I have obtained my best results by using Mallory's quick hematoxylin and chloride of iron method, and by using Mallory's phosphotungstic acid hematoxylin. With these stains all the entamœbæ found in the mucus and blood stools showed the typical nuclear structure described by Hartmann. With phosphotungstic acid hematoxylin the centriole stains well, and the caryosome is beautifully demonstrated, as is also the peripheral chromatin on the nuclear membrane. With other methods I have not been able to demonstrate the typical structures nearly as well. Either Schaudinn's fluid or Zenker's gives excellent results as a fixative. However, unless the specimens are very carefully differentiated after staining, the nuclear pictures may be easily confounded with those of histolytica, as the caryosome decolorizes very quickly.

Those who seek to assimilate tetragena with histolytica, solely on the morphology of the nucleus in the vegetative stage, are, in my opinion, misled by faulty staining, since in histolytica infections the caryosome, as seen in tetragena, is not present, and the nuclear chromatin is much more scanty. If more attention were paid to the life cycle of these organisms, and less to morphological resemblance or difference in so minute and easily altered a structure as the caryosome, many of the reasons for the alleged identity of the two would lose much value.

NOTE.

Since the foregoing paper was read, I have had an opportunity to make a more careful and definite study of the entamœbæ found in the human intestinal tract, in the Canal Zone. In all, over twenty-five other infections have been studied. While the points brought forward in my paper are, I believe, in the main correct, more recent study impels me to present my additional experience.

1. Tetragena infection, as recently pointed out by Dr. S. T. Darling, is more common in the Canal Zone than histolytica infection. Except in very urgent cases, treatment has been withheld to determine the species. About seventy per cent. of infections with pathogenic entamœbæ, in my personal experience, went on to the formation of four nuclear cysts, proving the presence of tetragena infection.

2. There is, however, apparently a distinct differentiation in these infections, clinically as well as morphologically. In the active vegetative stage, associated with dysentery, those entamœbæ which exhibited the characteristics of histolytica in wet fixed and stained specimens, did not go on to cyst formation, but persisted unchanged, even when the stools were semisolid, except for the formation in some instances of the so called chromidia. Two of these infections were carefully followed over a period of three weeks. On the other hand, in all but one instance, the infections in which the entamœbæ were of the characteristic tetragena type, went on to cyst formation, with a marked remission, even to an apparent cure of the symptoms, and without medication.

3. As far as we can judge at the present time, these tetragena infections, with one exception, have yielded readily and promptly to bismuth treatment, without relapse. One patient had a recurrence three months after the previous admission. All of the histolytica type infections yielded readily to the treatment, except once, when the patient died shortly after admission. The only abscess of the liver that developed followed an infection with the histolytica type of entamœba.

4. The best iron hematoxylin pictures are given by the use of Heidenhain's method, with iron and ammonium sulphate in a 3.5 per cent. aqueous solution as a mordant. The hematoxylin, however, must be old, have been used repeatedly, and when new solution is used, one half of the old and one half of the new should be used. Otherwise the definition will not be sharp. I am indebted to Major E. R. Whitmore, of the Medical Corps, U. S. A., for this valuable point in the technic.

I find that the best decolorizing agent after the phosphotungstic acid hematoxylin stain, after washinging in distilled water, is a strong aqueous solu-

tion of orange G, in which the specimens remain for at least twenty minutes. They are then washed again in distilled water until all of the orange dye comes out, and treated further as recommended by Mallory and Wright in their *Pathological Technique.*

5. I do not find that nuclear morphology, in specimens from stools with pus and blood, is a definite factor in the determination of species. Even with the most careful differentiation, many of the organisms in undoubted tetragena infections show nuclei that are exactly similar to those described for histolytica; and more than once, in infections in which the entamœbæ were nearly all of the histolytica type, and where there was no cyst formation, typical tetragena, nuclei were observed. These observations were not made after one fixing and staining process, but after several. Also, I have not, at any time, been able to observe the "spore formation" described by Schaudinn for histolytica.

6. However, in the "latent stage," the appearance in wet fixed and stained specimens of tetragena is very typical, and corresponds very exactly, as far as I can judge, to that described by Elmassian for the vegetative stage of *Entamœba minuta.* If it be true that *Entamœba minuta* is the same organism as is tetragena in this latent stage, the exact description of the life cycle of tetragena in man must be revised accordingly. Elmassian's account, in the November and December, 1909 numbers of the *Centralblatt für Bakteriologie,* should be carefully studied by those interested in this subject. His illustrations are not surpassed by any in the literature.

7. Notwithstanding the apparent identity of histolytica and tetragena in the active vegetative stage, I am not convinced that they are the same species, on account of the difference in the morphology in the "latent stage" in each species. Except that the organisms are smaller at this time, and sometimes contain the so called chromidia, histolytica nuclei, and cytoplasm are unchanged, while the whole appearance of tetragena is different. I agree entirely with Craig's statement that a proved differentiation of these two species will of necessity be based on a study of the entire life cycle, in fresh and in stained specimens.

8. *Entamœba coli* can be easily differentiated from the pathogenic species, especially by prolonged staining after any of the Romanowski methods, and differentiation as recommended by Darling.

I am still of the opinion at this time (December, 1912) that infections of the tetragena type are more chronic, but less virulent than infections of the histolytica type.

I do not believe that the problem of the identity or of the differentiation of the pathogenic species will be solved until the entamœbæ can be cultivated. Bass's success in the cultivation of the malarial parasites perhaps will afford a method of obtaining this.

I have not appended a bibliography, as a very complete one can be found in Craig's recent paper, Observations upon the Morphology of Parasitic and Cultural Amœbæ, *Journal of Medical Research,* xxvi, 1 (New Series, xxi, 1), April, 1912.

ANCON HOSPITAL.

TABES DORSALIS WITHOUT LYMPHOCYTOSIS.

Lightning Pains Maintained by Conditions Causing High Blood Pressure; Failure of Specific Treatment; Success of Detoxication Treatment.

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The most instructive case under discussion was one in which, although syphilis of thirty years' standing had produced the lightning pains of tabes for eleven years, yet no relief had been obtained by thorough specific treatment. The patient, who was referred to me by Doctor Briggs in May, 1912, had visited Hot Springs on nine different occasions, and had several inunction courses without benefit. He had taken as much as 450 grains of potassium iodide per diem for weeks at a time, and recently had received salvarsan, which only aggravated the pains; so that for a month he had been unable to work and had not slept without narcotics. There had been doubts concerning the diagnosis. Several Washington physicians called the condition rheumatism; Doctor Osler had thought it neuritis before he left Baltimore; later Doctor Thayer believed it was tabes. Increase of the pains had led the patient to New York, where he saw Doctor Dana, who also diagnosticated tabes. Other neurologists dissented from this opinion.

CASE. There had been no disorder of miction, no visceral crises unless a rectal ache upon two occasions was such. There had been no girdle sensation or numbness, nor irritation of the nerves of special sense, no vertigo nor nausea except what was provoked by medicines. There had been no diminution or excess of libido, nor any irritability of temper; and his general health had remained good in spite of the intensity of the pains. These occurred in crises sometimes at an interval of months, sometimes as many as a hundred times a day.

He had never dissipated; but he took from three to fifteen drinks of whisky a week, but no beer or other intoxicants. He smoked three pipes and a cigar or two, and drank one cup of strong coffee daily. He considered himself a small eater, but took fish and meat for breakfast, the usual dinner and a milk and buscuit lunch.

Examination. The motility was normal, there being no trace of incoordination. As to the reflexes, the Achilles were absent, the patellar needed reinforcement, those of the arms were active, the bulbocavernosus reflex was absent on the right, and diminished on the left. The abdominal were active, especially the right, while the cremasteric was more active on the left. Of the plantar reflexes, the left showed the normal flexion as did the smaller toes of the right foot; but the right great toe extended slightly on stroking the sole. The vasomotor reflexes were equal on the two sides, on the thigh, the right exceeded the left, while on the abdomen the response was less on the right side. The pupils reacted fully to light, especially the left, which was oblate superiorly.

As to sensibility, there were no paresthesiæ. There was hyperesthesia to pin prick of the left chest and right thigh when tested against the left abdomen; also on the right side, in the fifth lumbar and first, second, third, and fourth sacral region, most in the third and fourth segments. On the left side, the diminution was similar, but was less in the first and second sacral and fifth lumbar.

The sense of deep pain in the Achilles tendon was delayed over three seconds; but when felt, was intense, much more so than normal. The diapason was everywhere felt, and the sense of attitudes was unimpaired except perhaps in the right foot.

The Wasserman reaction was negative. The cerebro-

spinal fluid contained 3.5 white cells to the c. mm.—two examinations. Of these, seventy per cent. were lymphocytes twenty-nine per cent. large mononuclears, half of one per cent. were endothelial cells, of the remainder none were plasma cells. The protein content was very slightly increased.

The systolic blood pressure was 170, the diastolic 95. The pressure was raised by pain and tenderness at once.

DIAGNOSIS.

Without going into detail, two conditions were present in my opinion: one was tabes dorsalis of *forme fruste*, the other was vascular hypertension. I reasoned that the toxicosis which elevated the blood pressure probably also aggravated the old lesions of the posterior spinal roots and helped to produce the lightning pains. I did not believe that an active luetic radiculitis could be present then without a lymphocytosis greater than the 3.5 to the c. mm., which was all that we found. Besides, the clinical sign of delayed and aggravated sensibility to deep pain is one characteristic of an inflammation of nerve of toxic etiology, although it is unusual at least to find a delay so long as three seconds. In this case the length of the delay might be attributed to the remains of the chronic radiculitis specific in type.

Another interpretation is possible, viz., that the hypertension and the causes which lead to it interfered with the vascularity of the posterior roots so as to permit of their attack by the tabetogen through interference with this man's strong natural immunity. Whatever the explanation, the treatment which ignored the syphilis and was aimed at the toxicosis succeeded perfectly, so that the patient obtained a relief which has lasted now over five months.

TREATMENT.

The treatment employed was diminution of the proteins to the Chittenden standard, fifty grammes per diem, and an abundance of saline and carbohydrates in the diet; the cessation of tobacco, alcohol, and coffee; a daily sweat bath followed by douches and massage; thirty grains of organic sodium three times a day for three weeks. The pains began to diminish. On May 20th the blood pressure was systolic 170, diastolic 120, temporary rise not accounted for. June 1st, systolic 154, diastolic 95. Only one day of pain necessitating codeine had occurred up to this. June 8th, blood pressure was systolic 150, diastolic 100. November 1st, systolic blood pressure 170.[1] He weighs 206 pounds—that is a loss of eleven pounds—and feels perfectly well.

It has been said that the recognizable symptoms of arteriosclerotic antecedents *show themselves only* when the disease can no longer be detected. It would be more accurate to say they they are *not usually diagnosticated* until too late for a return to normal.

An excess of lymphocytes in the cerebrospinal fluid is almost characteristic of meningeal syphilis, without a chronic form of which tabes dorsalis cannot occur, in the view of many authorities. Tabes dorsalis being merely a result of chronic radiculitis, one would expect lymphocytosis to be *sine qua non*. The fact that it is so is not altered by the failure of a single examination to reveal a lymphocytosis. To the rare reports of a normal condition of cerebrospinal fluid in tabes I now add another, provided that the number of 3.5 lymphocytes to the c. mm. is not regarded as excessive; for while three cells to the c. mm. is regarded by most cystologists as within normal limits, Sicard protests against not regarding it as pathological. He furthermore believes that lymphocytosis is never absent, except, perhaps, in cases of very long standing indeed, in which the evolution is arrested.

Of such a type was the case Souques reported in a woman of sixty-three years, who at forty-eight had diplopia followed by amaurosis, and when examined at sixty-three showed double optic atrophy, pupil rigidity, and loss of one knee and both Achilles reflexes.

In a recent symposium at the Paris neurological society, this was the general view, but Laignel-Lavestine, using his own method of enumeration, had found in 1901 a case with only one lymphocyte. He also had reported five paretics with less still. The improvements in technic since then, however, render his observations doubtful.

That lymphocytosis indicates active lesions is believed by many pathologists, with the corollary that its absence denotes an arrest of the morbid process in the meninges. It is believed, too, that one portion of the rhachidian sac may contain at the same time many more lymphocytes than another.

In line with these observations is the case of progressive, ascending amyotrophy reported by Leri, in which, while the cervical meninges were loaded with lymphocytes, in the dorsal region the thickened meninges contained none

This explanation can hardly apply to the case I report; for the few active symptoms were referable to that very region, the lumbar, in which the puncture was made; and the enumeration was not made by the old method of Ravaut, but by the extremely accurate method practised by Alzheimer and Nageotte.

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[1]The patient has just suffered a violent relapse, which is again relieved by detoxication treatment in which diaphoresis and massage played a large part. The relief was only temporary, for the patient was careless regarding the diet; as, although he thought he was following instructions, crossexamination showed that he believed diminution of foods to be the cardinal point. He had therefore neglected to take sufficient of the saline constituents; whence, I believe his failure to improve now, as the blood pressure was 178 when measured in December, since when I have had no chance to examine him as he has left my care.

HYPERTRICHOSIS.

By Adolph Brand, M. D.,
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In spite of its frequency, hirsuties has not received the attention it merits. True, the condition is not dangerous to life and limb, nevertheless untold misery is caused to the one afflicted with an abundance of hair on exposed parts of the body—especially on the face. Women suffering with this trouble are apt to brood over their misfortune, shun society, and finally become hypochondriacal and even melancholy. Not knowing the proper means to rid themselves of the superfluous hair, they resort to the tweezers and to various advertised de-

pilatories. Some burn the hair, others use pumice stone, and still others have recourse to the razor as a final resort. All these measures give only temporary relief, to be followed later by an increased growth of coarser hair. Some of the depilatories used leave nasty scars in addition to the increased growth.

Hypertrichosis may be general or partial. The general form, hypertrichosis universalis, is very rare, while the other, hypertrichosis partialis, is the more frequent and familiar form. The universal hypertrichosis is generally congenital, the subject at birth being covered thickly with fine hair, which continues to grow till they reach full development. Cases of this kind have been found in different parts of the world, and are generally exhibited in museums and circuses. Probably the best known example of this type of hirsuties was the so called dog faced Russian boy. Other instances of excessive growth of hair on parts of the body or a heavy growth at an unusually early age have been reported, but such cases are mere curiosities, and do not interest us.

After the menopause has been passed, women very often grow a few straggling, coarse hairs on the upper lip and on other parts of the body, which are to them simply a sign of advancing age and therefore are accepted as the inevitable. The physician is concerned chiefly with that form of hypertrichosis which occurs in young women. This may be termed the acquired form, as it makes its appearance about the eighteenth year, and is mostly met with between the ages of twenty and thirty-five years. This being the period of a woman's life during which her physical charms receive her greatest attention, the appearance of such a disfigurement causes in many cases intense misery and calls for prompt attention on the part of her physician to save his patient an embarrassment which may bring on a neurotic condition and an impairment of the general health.

As to the causes of hirsuties, nothing very definite can be said. In universal hypertrichosis heredity may be an important factor, as families suffering with an overgrowth of hair have been recorded. Nervous influences have been assigned by some as a causative factor. Unna maintains that the condition is due to a persistence of fetal or primitive hair, which in some individuals does not change to lanugo but continues to grow coarser. Atavism has also been given as an explanation.

The application of heat and moisture seems to favor growth of hair. Under stimulation of poultices, hair often grows luxuriantly. Anything which determines an increased flow of blood to a part will aid in the growth of hair. Certain drugs, chiefly pilocarpine, causing hyperemia of the skin, are an aid in its production. Derangement of the sexual organs has also been credited with causing an increased growth of hair, but many women suffering with hirsuties have been found free from uterine disorders.

Interesting as these theories are to the scientific mind, the patient afflicted with this deformity seeks our services with one object only—to be rid of this blemish. Can we promise our patients permanent relief? The writer, basing his opinion upon an extensive experience along this line of practice, is convinced that we may answer in the affirmative. We may assure our patients of good permanent results if they submit to treatment by electrolysis, but we must also inform them at the very outset that the treatment is necessarily somewhat painful and tedious to both patient and operator, and requires time as well as patience for its consummation.

Facial hirsuties is a condition to be dealt with by the physician skilled in his kind of work, and should not be delegated to the quack and charlatan, whose only aim is to separate his victim from as much money as he possibly can. Were the pecuniary loss the only one, matters would not be so hard; but the trouble only begins here. Forced very often to seek the services of unskilled and ignorant advertising so called "beauty doctors," because the regular medical dermatologist frequently discourages such patients from seeking his services for fear that he might be classed as a "beauty doctor" and thus lose caste, the poor woman not only pays her own or her husband's money to an unskilled operator, who not only does not accomplish that for which he is paid very handsomely, but on the contrary, increases the existing disfigurement.

The unskilled advertising quack is wholly ignorant of the structure of hair or skin, and knows nothing, or at best, very little of the use of the electric current for this delicate work. The results of such treatment are severe pain to the woman, a mere epilation of the hair without destruction of the papilla, a positive return of the epilated hair, a stimulation of the lanugo and an increased growth, and, worst of all, scarring of the face, which adds to the deformity and causes more worry to the patient.

Such cases come to our notice only too frequently; hence we feel keenly upon the subject. Only recently a lady told the writer that she paid the magnificent sum of $500 to a woman who advertises to eradicate superfluous hair with the electric needle. The result of the treatment she underwent was a marked increase of hair—as the lady herself freely admitted—months of torture at the hands of this self styled expert, a complete nervous breakdown, and absolute loss of belief in the ability of any physician to rid her of the unsightly facial blemish. In connection with this case, I may add that this lady consulted the advertiser because she had never heard that medical men treat such conditions. Her own physician, to whom she spoke about her case, did not seem to know that a remedy might be had at the hands of his own fraternity. It is true that many women try to obtain cures for facial hirsuties as they do for other ailments, by answering alluring advertisements of their own accord; but a good many are actually obliged to seek the services of quacks because many competent physicians deem it beneath their dignity to treat hirsuties and other facial blemishes.

A parallel of this peculiar attitude of some dermatologists can be found in a similar attitude assumed some time ago by many physicians toward venereal diseases. Some of the older writers advised their younger colleagues to discourage venereal patients from seeking their help, as catering to such class of practice would put them into dis-

repute with other patients. Those times and those writers have happily passed, and we all know the modern attitude of the profession toward this class of sufferers and the progress that has been made recently in this branch of practice. May we not hope, then, that our dermatologists will also change their present attitude toward the patient with facial hirsuties?

In view of the unhappy results obtained by the so called "beauty doctors," is it fair to the patient who consults us to throw her upon the mercies of the ignorant worker with the electric needle? Is it just to endanger the health and happiness of a human being to whom Nature has been unkind, when proper remedies are at hand?

Indeed, it is the writer's firm belief that this attitude is unjustifiable. The removal of facial blemishes and superfluous hair requires skill and special knowledge of this kind of work. It requires a steady hand, just as much as does the practice of surgery. It has been very aptly remarked by Doctor Ravich, of Louisville, Ky., that the operator, to be successful, must possess an "artistic hand," and Dr. George Henry Fox, of New York, states that very few men possess the technical skill to do this work properly.

Now whatever demands the possession of an "artistic hand" and a high grade of technical skill for its execution, surely should not be looked upon by the physician as something unworthy of his endeavor, unless he feels that he is not the happy possessor of those two qualities. Painstaking work in the treatment of facial hirsuties and other facial blemishes does not detract from the physician's dignity. Skillful work insures good results to the patient, increases her happiness, and secures friends for the operator.

The eradication of superfluous hair by electrolysis is the achievement of Americans, Michel and Hardaway, of St. Louis. That the operation gives rise to some pain cannot be denied; but the degree of pain varies with the site treated; the upper lip, it seems to me, is the most sensitive part. Some patients stand the treatment very well, while others complain bitterly of severe pain.

A number of suggestions have been made regarding the use of local anesthesia. Jackson advises the oleate of cocaine to be rubbed into the skin for some five or ten minutes before beginning the operation. Cocaine and suprarenal extract have also been used by cataphoresis. Baum, of Syracuse, asserts that the operation is made painless by washing the part with absolute alcohol. I am sorry to say these local anesthetics have not given me the happy results claimed, and I have dispensed with them entirely, with the exception of alcohol, which I use merely as an antiseptic measure.

The instruments required for this operation are a galvanic battery, the motive power of which may be either cells or the street current; a milliampèremeter, in connection with the battery, which, although not absolutely necessary, is very useful, as it furnishes the only means of measuring the current; two conducting cords, one for the positive and one for the negative pole; a sponge electrode of the type generally used with electric batteries; a needle holder about three inches in length; and a dull pointed platinum needle. A magnifying glass mounted on a needle holder may be used; but is hardly necessary with good light and good eyesight. A small epilation forceps completes the outfit.

Patients are best treated by good daylight, although it is possible to do the work by good artificial light; but that is very trying to the operator's sight and should be discouraged.

The technic of the operation is as follows: The patient is put in proper position on a chair or on an operating table, and the site to be operated on is washed with tincture of green soap and then with absolute alcohol, till the soap is washed off and the alcohol is allowed to evaporate. The conducting cords are attached to the battery, and, to avoid mistakes, it is advantageous to have the two cords colored differently—red, a danger color, for the positive, and green for the negative pole. The sponge electrode is attached to the positive pole and the needle holder, with the needle in place, to the negative pole. The patient then grasps the sponge electrode by the handle with the left hand and is shown how to make contact by pressing the sponge against the palm of the right hand at the command of the operator. The sponge should be moistened with warm water to secure a better flow of current. Contact may be made with any part of the patient's body, but I believe it is best to make it with the palm of the opposite hand, as both hands are thus engaged, giving the patient no opportunity to grasp the hand of the operator when experiencing the first sensation of pain.

The operator then selects the hair he desires to work on, stretches it with his forceps in the direction it grows, and the needle is inserted into the follicle in a line parallel with the hair, to a depth of about a tenth or an eighth of an inch. The patient is now told to connect the sponge electrode with the opposite palm and the current is on. After a lapse of a few seconds, an effervescence of hydrogen gas is seen at the mouth of the follicle; very slight traction is then made on the hair with the forceps, and if the papilla has been destroyed the hair comes out very readily. To insure total destruction of the papilla the needle is left *in situ* for another second or two and worked around in a circular manner. The patient is now told to disconnect so as to avoid shock, and the needle is withdrawn.

This method is repeated for each individual hair. The operator should instruct his patient carefully before starting regarding the make and break of the current, so as to avoid shocking her unnecessarily. The needle should always be inserted into the follicle before the contact is made, and the patient should always disconnect before the needle is withdrawn. I make the following arrangement with my patient: When I say "on," the patient makes the contact, and breaks it at the command "off." The operator must bear in mind that it is the negative pole that gives rise to electrolytic action, while the positive pole is the indifferent one, and should guard himself very carefully against making the mistake of attaching the needle holder to the positive pole instead of to the negative. Such a mistake would cause charring, and a permanent

black spot would be likely to result in a lawsuit. The first question a patient never fails to ask is regarding the amount of pain. I make it a point to tell my patients that the operation is more or less painful, but the results obtained are well worth a little pain.

It should also be explained to the patient at the outset that some hairs cannot be destroyed with one treatment, and that it will be necessary to treat them again should they return. To avoid having a very frightened patient returning to one's office the following day, it is advisable to inform her that punctate spots and redness and perhaps wheals will be the immediate result of treatment, but the skin assumes its normal condition after a few days.

To avoid scarring, as little current should be used as possible. Only the coarse hairs should be removed at first and lanugo is better left alone. The operator should spread his work over a large area, as many hairs removed at one sitting from a small region will give rise to too much inflammation with probable ulceration. A few days should elapse before working on the same area again. I make it a point not to touch the same region until all inflammation has subsided.

There is practically no after treatment; but the patient may be instructed to wash her face with warm water and rub in a little cold cream when she gets home. I have found that wiping off the froth from the mouth of the follicle after withdrawal of the needle shows the punctate openings too plainly, but if the effervescence is allowed to dry, the openings close up much better. These patients scrutinize their faces very carefully after treatment, and the less disfigurement they see, the more hopeful they are of ultimately being rid of this deformity.

In conclusion, I should like to say that electrolysis gives us the one means of eradicating superfluous hair permanently. The operation is absolutely safe, and if the proper amount of skill is attained and the operator is careful in selecting the right kind of a needle and exercises care and judgment in the amount of current for each individual case, he need hardly fear scarring his patients.

I will again emphasize that this particular line of work requires knowledge and skill on the part of the physician and is in full accord with the dignity of his calling; facial hirsuties should be treated therefore by him and not by the ignorant advertising quack.

1431 Madison Avenue.

THE DIAGNOSIS OF PULMONARY TUBERCULOSIS.

By Henry S. Goodall, A. B., M. D.,
Lake Kushaqua, N. Y.

The symptoms of early tuberculosis, loss of weight and strength, slight elevation of temperature, rapid pulse, slight cough, etc., are familiar to all. They may, however, be produced by many other causes. Before considering these other causes and endeavoring to differentiate them, I desire to review some of the methods commonly used in diagnosticating pulmonary tuberculosis.

The presence of permanent râles over a localized area is probably the most positive sign that we have of tuberculosis. In most incipient cases, and a fair number of moderately advanced cases, râles can be elicited only by coughing. This is a very important point, and one not mentioned in many textbooks. There are two ways of coughing—the ordinary cough given with the lungs moderately full of air and the so called expiratory cough. The latter cough is given at the end of expiration with the last of the air that the patient can force from the lungs. In each case a quick inhalation must follow the cough. If there is an unusual degree of moisture in the lungs, one or the other form of cough will be followed by more or less numerous small râles. As a rule, expiratory cough will produce râles earlier in the progress of a case than will the ordinary cough, but occasionally the reverse is true. Therefore we must use both forms of cough before we are justified in denying the presence of râles. Fine crackling râles are not infrequently found at the bases of the axillæ and rarely elsewhere along the borders of the lungs in perfectly healthy people. These are probably due to the expansion of partially atelectatic areas of lung border, and they usually disappear after a few deep breaths. Aside from these, we may safely assert that any râle heard over the lung indicates some pathological condition. If the râles are limited to a definite localized area, especially at the upper part of the lung, and if they are found on two or three occasions, they indicate almost invariably pulmonary tuberculosis, or occasionally chronic influenza. I do not believe that any simple catarrhal condition produces, of itself alone, localized changes in physical signs. Our search for râles and other signs must be carried out with the chest bare to the waist, except for a light shawl, which may be shifted to expose the front, back, and sides of the chest in turn. Recently a patient was admitted to the sanatarium, in whose preliminary report mention of a considerable amount of disease at the base of one lung was omitted. This woman stated that only the upper part of the chest had been examined. The diagnosis in this case was correct, but the findings had been incomplete, and it was necessary to give a much less favorable prognosis than that of the physician who overlooked the basal lesion.

In a lengthy article published in the *Beiträge zur Klinik der Tuberkulose* (Brauer, xviii, 3), Dr. W. Neuman describes the changes in physical signs produced by scoliosis. Four distinct and characteristic areas are given, over which we find dullness and decreased respiratory sounds. The change in resonance is due to increased curvature of the ribs, and the decreased respiratory sounds to expansion of the lung and a consequent emphysematous condition under these over curved ribs. These regions are found next to the primary and secondary convexities of the point of scoliosis and at diagonally opposite areas at the same level. For instance, in scoliosis of the upper dorsal spine with convexity to the right we find, first, an area at the upper part of the right lung posteriorly, on the same side as the convexity, where there are dullness and impaired respiratory sounds; second, an area over the upper left lung in front, diagonally opposite to the

first area and to the spinal convexity, where the same changes are noted, but in less degree; third, an area at the base of the left lung posteriorly; and fourth, an area at the base of the right lung anteriorly, the changes in signs being less over these areas than over the first two areas. Neuman further states that the vesicular murmur is sharpened over areas opposite to the areas of dullness, as at the upper part of the left lung posteriorly. The base of the lung opposite the primary scoliotic convexity stands at an unusually high level and is relatively immobile, while the base of the lung on the side of the convexity stands low and is freely mobile.

In contrast with the foregoing conditions, we usually find in tuberculous lesions that the vesicular murmur is sharpened over the area of dullness and that the base of the lung showing dullness is relatively immobile, while the base of the opposite lung is freely movable.

Neuman maintains that râles due to acute bronchitis may remain in the areas of scoliotic dullness after they have disappeared elsewhere, because of the emphysematous and relatively poorly aerated lung tissue present in these areas. The presence of scoliosis and the regular arrangement of the other changes in physical signs should enable us to distinguish this condition.

In a similar way râles may be present after acute bronchitis over an area of collapse induration at one apex, the induration being due to adenoids or other obstructions in the upper air passages and the râles persisting because of poor aeration of the apex in question.

While it may be possible to exclude pulmonary tuberculosis in the presence of localized râles and dullness in both these conditions, we must be very slow in reaching such a conclusion. We must have the complete picture of scoliotic changes, or of obstruction of the upper air passages, as well as a history of very acute bronchitis to account for the hang over râles, and these râles must furthermore disappear in at most two weeks after the other parts of the lungs are clear. If they persist longer, the condition should be considered to be due to tuberculosis.

Now and then the larynx will give us evidence to establish our diagnosis, and in all cases of suspected pulmonary disease the larynx must be examined. Swelling or infiltration of the arytenoids, the posterior commissure, a vocal band or true vocal cord, frequently accompanies early tuberculosis. It is rare not to find swelling in one of these locations in tuberculous disease with extensive physical signs. The presence of such conditions would point very strongly to the tuberculous nature of accompanying slight changes in pulmonary sounds, and their complete absence would be strong evidence against tuberculosis if we found widespread physical signs over the lungs, as in chronic bronchitis or bronchiectasis. The rather clean cut ulcer of syphilitic laryngitis may help to distinguish pulmonary syphilis from tuberculosis.

In all cases of suspected tuberculosis the presence or absence of slight fever must be clearly established. To exclude fever we must have the patient's temperature taken every two hours for a week or two, taking it on the even hours one day, the odd hours the next. If the patient has night sweats, bad dreams, sleeplessness, or is very tired in the morning, the temperature should be taken at night. A range of two and a half degrees or more in the daily temperature is very suspicious, even if the upper limit does not exceed 99° F. A daily temperature above 99° F. demands an explanation.

Radiography and fluoroscopy, in the hands of an expert, frequently give positive evidence of pulmonary and glandular tuberculosis when other means have failed. They do not, however, tell us whether the lesion is healed or active except when repeated observations reveal changes indicating the progress of the disease.

The hypodermic tuberculin test may at times decide our diagnosis in pulmonary disease—positively if it produces a reaction in the pulmonary focus with increased râles; presumptively when no fecal reaction is present. We have no way of telling with certainty whether a general reaction without reaction at the suspected pulmonary focus is due to conditions in the lungs or to some tuberculous focus in the lymphatic glands or elsewhere.

The various skin tests and the eye test are of little value except in young children, or when repeatedly negative. All the tuberculin tests may be negative in very active tuberculosis or after measles and other acute infectious diseases.

The absence of tubercle bacilli from the sputum does not speak against the presence of tuberculosis with much, if any, force. It is only when sputum is abundant and tubercle bacilli cannot be found by the antiformin or the Ehlerman test after repeated trials, and when Much's granules are persistently absent, that the negative finding has any weight. The presence of tubercle bacilli in the sputum positively establishes the diagnosis of pulmonary tuberculosis if the larynx and upper air passages are free from tuberculosis, but we have still to consider whether or not some other disease is also present.

Spitting blood is in the vast majority of instances due to pulmonary tuberculosis, though we should not fail to look for other causes, such as chronic endocarditis, especially mitral stenosis, a varicose condition of the veins of the lingual tonsil, bleeding gums, etc. It may be due to malignant disease of the lungs.

The diseases of the lungs that may give the usual symptoms of tuberculosis are chronic influenza, syphilis, chronic bronchitis, bronchiectasis, unresolved pneumonia, and malignant disease. It is almost impossible to distinguish between influenza and tuberculosis in some cases unless we find the bacillus of one or the other disease. Both produce localized condensation of lung tissue with râles, together with cough, slight fever, and loss of weight and strength. The history of the case or a tuberculin reaction with an increase of the focal signs may decide the matter. In the absence of pretty clear evidence to the contrary, the case should be pronounced one of tuberculosis. Syphilitic lesions are usually in the central or lower part of the lungs, but as tuberculosis may at times be also thus situated, we must rely upon the history of the case, the presence of other signs of syphilis, the appearance of the larynx, the Wassermann test, a negative tuberculin test, and the fact that syphilis of the lung

usually produces less emaciation and other general disturbance in proportion to the physical signs than does pulmonary tuberculosis. The therapeutic test may be needed, but should be tried only when we are fairly sure that tuberculosis is absent, as the energetic use of antisyphilitic treatment is injurious to tuberculous patients free from syphilis.

Chronic bronchitis may produce all the symptoms of tuberculosis, including slight daily fever; but here again the general health is less seriously impaired than in tuberculosis, giving equally widespread signs. In bronchitis the signs are not limited to any part of the lung, but are widely scattered. Râles are more numerous, more liquid, and of larger size toward the base of the lungs in bronchitis, while in tuberculosis they predominate over the upper parts of the lung. Furthermore, in tuberculosis widely scattered over one or both lungs, we are pretty certain to find some regions where well marked dullness indicates consolidation, whereas in chronic bronchitis no such dull area is found, the resonance being pretty uniformly altered over the whole chest or else normal. With the presence of bronchiectasis we find signs of cavities usually in the lower lobe behind, with sputum raised in large quantities once or twice a day, which forms strata on standing and has a very offensive odor. Emaciation and weakness are not as great as one would expect with an equally extensive and active tuberculous process. Tuberculous cavities are usually at the upper part of the lungs, except in young people, where the lesion is not infrequently at the base.

In pulmonary abscess the history of a preceding pneumonia, the evacuation of considerable purulent fluid on one or more occasions according as the abscess cavity refills or not, the location of the abscess in the lower part of the lung, and the absence of tubercle bacilli will help to make the diagnosis. The signs of abscess are those of localized consolidation with râles in the surrounding irritated lung, or of cavitation if the abscess has discharged into a bronchus without subsequent collapse of the abscess cavity.

An unresolved pneumonia may simulate basal tuberculosis very closely. The dullness with small râles may persist for months and the general condition of health be persistently below par. The history of acute onset, the presence of diplococci or other cocci in the sputum, the presence of leucocytosis, the constant absence of tubercle bacilli, a negative tuberculin test, and the absence of apical tuberculosis, indicate a pneumonic condition. Marked tuberculous consolidation at the base without other tuberculous lesion in the lung is not common except in children under twelve or thirteen years of age.

Malignant disease is indicated by the presence of cancer elsewhere, of bloody pleural effusion, possibly particles of cancer tissue in the sputum, frequent hemoptysis, absence of tubercle bacilli, irregularly located dullness with faint or absent breath sounds. An editorial in the *Medical Record* for September 28, 1912, goes more fully into these points.

In asthma the presence of more moisture at one apex than elsewhere indicates quite frequently an independent tuberculosis of that apex complicating the asthmatic condition.

Certain other diseases not involving the lungs may give us the usual symptoms of tuberculosis—loss of weight and strength, rapid pulse, and slight rise of temperature. A little cough is so common from pharyngeal causes that it is often present in a great many conditions.

Several years ago a young woman was sent to us presenting the usual symptoms. She had had a cold and some cough and expectoration in which no tubercle bacilli had been found. This cough, as well as the expectoration, had disappeared before admission. She had lost some weight, became tired easily, had a pulse of 100 to 120, and a temperature of 99° to 99.5° F. in the afternoon. Physical examination revealed no definite change in the pulmonary sounds. The tuberculin test was negative. The thyroid gland was somewhat enlarged bilaterally, more on one side than the other, and there was a slight though clear tremor of the fingers. There was no exophthalmos. This patient was kept under observation for a time and finally sent back to the city, where part of the thyroid was removed. Since the operation she has had no further trouble.

Graves's disease not infrequently simulates early tuberculosis closely in its symptoms. Not infrequently also Graves's disease is present together with early pulmonary tuberculosis.

Autointoxication from the intestinal tract may give all the signs of tuberculosis. Recently a man was sent to the mountains for tuberculosis, in whose lungs I could detect nothing abnormal, but who presented the usual symptoms of tuberculosis. A further examination revealed a slightly enlarged liver, a hyperresonant abdomen, coated tongue, foul breath, and sallow skin. The urine was loaded with phosphates and showed excess of indican. He also complained of rather severe and nearly constant headaches, and of great fatigue after reading. A moderate degree of hypermetropia and astigmatism was found, correction of which stopped his headaches and enabled him to read with comfort. Attention to the intestinal condition led to great improvement, which a faithful observance of the usual rest and overeating treatment had failed entirely to produce.

Chronic appendicitis, tuboovarian disease, and chronic endometritis have served as the underlying causes of sickness diagnosticated as early tuberculosis. A careful inquiry as to symptoms and a painstaking exploration of the abdomen and pelvis, together with negative pulmonary signs, will usually lead us to the right conclusion. Anemia in such cases is often real, as shown by blood examination, whereas in early tuberculosis the anemia is frequently only apparent, the lips and mucous membranes are pale, but the hemoglobin and red blood cells are not much below normal. Leucocytosis is not common in incipient tuberculosis, but may be present with chronic suppuration in the abdomen or pelvis.

Tuberculous bronchial or mediastinal glands produce all the symptoms of pulmonary tuberculosis, including a positive tuberculin test. Signs of pulmonary condensation are absent. Enlarged glands in the neck are often present and easily palpable.

The veins over the upper part of the chest in front and those at the temples are abnormally conspicuous. There is dullness over the upper dorsal vertebræ or to one side of them. The peculiar whisper over the cervical vertebræ is heard over the upper dorsal vertebræ as low as the fifth or sixth. It is usually lost over the first dorsal vertebra in normal people. We also hear the so called concomitant whisper over the upper dorsal vertebræ. When the patient says "one, two, three" aloud and very slowly, we hear the voice and whisper both at once, as if the patient spoke aloud and whispered at the same time. Reflex paresis of a vocal cord or a dilated pupil may be noted. This form of glandular tuberculosis is common in children under twelve or thirteen years of age, and may be recognized now and then in adults. It is in connection with glandular tuberculosis and centrally placed areas of infiltration that the x ray will help us the most.

Dr. W. S. Thayer, of Baltimore, speaking before the National Association for the Study of Prevention of Tuberculosis, mentioned the following additional causes of continued slight fever with loss of weight, diminished strength, rapid pulse, etc.: Vegetative endocarditis, amebic abscess of the liver, pyelitis, decayed teeth, and local foci of infection in the nasopharynx, such as small cysts containing purulent matter situated in the tonsils or adenoids, cough being present in the latter cases. He cited enteroptosis in slender young girls as being a rather frequent cause of sickness very much like early tuberculosis, and also related a very interesting case in which fever with localized dullness and râles in one lung were present. The sputum showed no tubercle bacilli, but did show Loeffler's bacilli, and the case was quickly cured by injecting diphtheria antitoxine.

One cannot dismiss the subject of diagnosis of pulmonary tuberculosis without first attempting to answer one very practical question, namely, upon how little evidence should one make the diagnosis of pulmonary tuberculosis?

Loss of weight, loss of strength, lassitude, and the feeling that one's ordinary work has become a burden, are sufficient symptoms, when of some weeks' duration, to warrant a presumptive diagnosis of this disease. The presence of slight cough increases the presumption. This presumptive diagnosis becomes positive if we can add to the foregoing picture a pulse of 90 or more while at rest, a daily rise of temperature to 99.5° F. or more, or a history of spitting blood. With this picture we should make a positive diagnosis, even if we can find nothing definite in the chest. Evidence of localized lung condensation or irritation strengthens the diagnosis, but is not necessary for it. A tuberculin reaction with increased activity over the suspected pulmonary area, or the presence of tubercle bacilli in the sputum settles the question beyond peradventure. If, however, we have neither of these absolute evidences at hand, we must set up our diagnosis of pulmonary tuberculosis and consider it against the other conditions which have been mentioned.

The burden of proof rests heavily, indeed entirely, upon the other disease. It must be able to cover fully all symptoms and conditions found, and it must be in harmony with the history of the case. Any deficiency at any point at once rules out the other condition as the principal cause and leaves the diagnosis of tuberculosis still standing. In all cases where there finally remains any doubt as to the presence or absence of pulmonary tuberculosis the diagnosis of tuberculosis must invariably be made. It is far better that any number of nontuberculous patients be pronounced tuberculous rather than that one really tuberculous patient should be pronounced nontuberculous.

STONY WALD SANATORIUM.

A COMPARISON OF TYPES OF CONTINUED FEVER.

BY WILLIAM ALLAN, M. D.,
Charlotte, N. C.

Leonard Rogers (1), in a study of the fevers of Calcutta, has demonstrated the greater severity and duration of typhoid fever in the Tropics, has given a good account of a functional low continued fever encountered in Europeans, and from among the unclassified short continued fevers has singled out seven day fever and three day fever.

Cabot (2) lays down tuberculosis, sepsis, and typhoid as the causes of continued fever in New England. Recently, Brill's (3) work has shown that in cities with a large foreign element, typhus fever will occasionally be met with; at present, however, typhus fever is unknown in the south.

It seems desirable to compare the fevers of the Piedmont region of the south with those of New England and the Tropics. For this purpose I have analyzed the records of the Presbyterian Hospital of Charlotte from the beginning of 1909 to July 1, 1912. Discarding tuberculosis and sepsis, I find one chart of benign tertian malarial fever, the only form of malarial fever so far reported from this section (4); one chart of amebic abscess of the liver, up to the present time the presuppurative stage of amebic hepatitis has not been recognized as a cause of continued fever, in spite of the common occurrence of abscess here (5); one chart of functional fever, reported elsewhere (6); and 110 charts of continued fever with comparatively slow pulse, diagnosticated as typhoid and including paratyphoid.

Although many of these charts are from three to nine days in duration, not a single one corresponds with either the saddle backed curve of the seven day fever of the Indian coast, or the rapidly falling curve of the three day fever of upper India, as described by Rogers (1), so that these two fevers probably do not occur in the south.

In comparing this typhoid series with Rogers's, it will be noticed that in Calcutta typhoid is pretty evenly distributed throughout the year, while in Charlotte seventy-four per cent. of the cases occurred during the last half of the year, as shown in table I.

TABLE I.

	First quarter. Per cent.	Second quarter. Per cent.	Third quarter. Per cent.	Fourth quarter. Per cent.
Calcutta	18.1	31.3	28.1	22.4
Charlotte	4.55	21.82	45.45	28.18

The age incidence cannot be compared, as this series is composed practically entirely of adults. The sex incidence is as follows:

TABLE II.

	Males.	Females.
Rogers	37	35
Presbyterian Hospital	69	41

The duration of the Charlotte cases after admission to the hospital was as follows:

TABLE III

Up to 15 days	60	36 to 42 days	7
15 to 21 days	20	43 to 49 days	5
22 to 28 days	10	50 to 56 days	3
29 to 35 days	4	57 to 63 days	1

Compared with hotter and colder climates, the duration of fever here is shown in table IV.

TABLE IV.

	Less than 21 days. Per cent.	22 to 33 days. Per cent.	Over 33 days. Per cent.
Curschmann	50.5	29.3	14
Rogers	37	38	25
Presbyterian Hospital	72.72	12.73	14.55

The number of cases of less than fifteen days' duration (excluding deaths) was 4.7 per cent. in Rogers's series of 129 cases, and 48.18 per cent. in the Presbyterian Hospital series of 110 cases. This easily bears out Rogers's statement that typhoid fever is of longer duration in the Tropics.

A comparison of the mortality rates also bears out his statement that typhoid is more severe in the Tropics.

TABLE V.
MORTALITY.

	Per cent.		Per cent.
Rogers	16.3	Osler	9.1
Curschmann	9.3	Presbyterian Hospital	8.18

A comparison of the types of fever curve shows a marked variation between the two series; following Rogers's classification, this series shows: 1. High continuous type with a diurnal variation of not more than 2° F. and remaining constantly above 101° F. for two or more consecutive days, thirty-one cases. 2. Low continuous type, falling below 101° F., two cases. 3. High remittent type with a diurnal variation of more than 2° F. and not falling below 101° F. for two or more consecutive days, twelve cases. 4. Low remittent type, falling below 101° F., sixty cases. 5. Intermittent typhoid, four cases, and one chart which can be classified only as abortive typhoid. The relative frequency of these various types is shown in table VI.

TABLE VI.

	High continuous. Per cent.	Remittent. Per cent.	Low continuous. Per cent.	Intermittent. Per cent.	Abortive. Per cent.
Rogers	71.72	23.91	1.09	3.28	....
Presbyterian Hospital	28.18	65.45	1.81	3.63	1.81

The character of onset was known in twenty-six of the Charlotte cases and in fifty-eight of the Calcutta cases, as follows:

TABLE VII.

	Charlotte		Calcutta	
	Cases.	Per cent.	Cases.	Per cent.
Gradual	19	79.17	28	48.28
Abrupt	5	20.83	30	51.72

Only one of Rogers's cases ended by crisis and in our 101 nonfatal cases none ended by crisis; eighty-seven showed a slowly declining temperature, and fourteen a fairly abrupt decline.

Contrary to experience in the Tropics, subnormal temperature during convalescence seems almost universal here, occurring in ninety-eight out of 101 cases. In twelve cases there was recrudescence of the fever, and in one case two recrudescences. In nine cases relapse occurred, and in one case relapse was followed by recrudescence. The type of fever in the cases having relapse is shown in table VII.

TABLE VIII.

Low remittent after high remittent	1	Low remittent	3
Low remittent after low remittent	2		
High remittent after low remittent	2	High remittent	3
High remittent after high continued	1		
High continued after high continued	1	High continued	2
High continued after low remittent	1		
Low continued after low remittent	1	Low continued	1

The complications are shown in table IX.

TABLE IX.

	Rogers. Per cent.	Presbyterian Hospital. Per cent.	Osler-Curschmann. Per cent.
Pneumonia	9.7	3.6	14 to 8
Vomiting	25	18.2	.....
Hemorrhage	17	10.9	3 to 5
Diarrhea	62.8	8.2	20 to 30
Thrombosis	5.4	.9	1
Perforation	1.5	.9	2.87
Pleurisy	...	.9	8
Acute nephritis (fatal)	...	.9	.....
Cholecystitis	...	.9	1.4

From this brief comparison it will be seen that in the Piedmont region of North Carolina more than half of the typhoid fever cases exhibit a low remittent temperature and that the duration of fever after admission to the hospital is less than fifteen days in fifty-three per cent. of them. These cases were practically all seen during the first week of illness, so that the short duration of fever and the remittent curves are not due to late admission during the third and fourth weeks. However, the mortality of the low remittent typhoid in this series (ten per cent.) is not less than the general mortality.

The preponderance of these short and often mild cases must be due to a liberal admixture of paratyphoids. In the absence of the tropical causes of continued fever, our diagnostic problem is the same here as in New England; our prognosis as to recovery is about the same as is that farther north and better than that in the tropics; our prognosis as to duration of illness is nearly a half better than that farther north and about twice as good as that in the Tropics.

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1207-1208 REALTY BUILDING.

MULTIPLE NEURITIS IN A CHILD.*

By J. M. WALLFIELD, M. D.,
New York,

Multiple neuritis in children is a very rare disease, except after the acute specific fevers, especially diphtheria, according to Holmes (1). B. Sachs (2) remarks that few writers have had much to say about multiple neuritis in children. Thomas

*Read before the Williamsburgh Medical Society, December 9, 1912.

and Greenbaum (3) held that the disease is not so rare, but that the cases are not reported, because they are not diagnosticated as such, being mostly mistaken for infantile paralysis or are not considered interesting. The case which is to be reported could be mistaken for one of tuberculous meningitis

CASE. Helen S., American, schoolgirl, seven years of age, came to the Williamsburgh Hospital April 14, 1911, in the service of Dr. L. Kerr. The family history showed that the father was well, but a heavy user of alcoholic drinks. One sister died at the age of three years of tuberculous meningitis, according to the mother's statement. Otherwise the family history was negative. The previous history showed that, except for an attack of measles at the age of three years, Helen was well till about five weeks ago when he mother noticed that she started to fade away.

About two weeks ago she came from school complaining of pain in the head. Two hours later she vomited. During the night she vomited a few times, but felt well on rising in the morning, and went to school. Toward evening of the following day, after a couple of hours of play in the street the child complained of severe pain in her right knee and in the occipital region. During the night she was restless and screamed from pain. She was treated by her physician for indigestion, but did not improve. During the last two weeks that she remained at home she lost rapidly in weight.

Present status. Child looked thin, apathetic, and was tender all over, especially at her lower extremities. She was lying on her back with thighs and legs flexed. Sordes were on both corners of the mouth; marked muscular atrophy of both legs. Patella reflexes were absent. Kernig's sign was present. Eyes reacted to light and accommodation. Pulse 100, respiration 30, rectal temperature 97.6° F. No other signs of interest. Within eight hours her temperature rose to 99° F.

For the first few days the girl refused to answer any questions at all, was constantly moaning, could not be moved on account of pain, especially in the legs. When she became accustomed to her new surroundings she answered questions with difficulty. She could not recollect how many sisters she had. There seemed to be hesitation of speech and thought.

April 17th. Temperature fell again to 97.2° F. at 8 a. m. and gradually rose within twelve hours to 100° F.

April 18th. Foot drop was noticed.

April 19th. Wrist drop appeared. There was no response to faradic current in all four extremities. Examination of urine showed a trace of albumin; specific gravity 1.005.

April 26th. An eruption appeared, at first macular, and within twelve hours wheals resembling urticaria, extremely irritating and covering entire body and face. The eruption lasted thirty-six hours and a coarse desquamation followed.

April 28th. A crop of furuncles developed on lower dorsal and lumbar regions. One furuncle was quite deeply situated, very painful, and bled freely on dressing. Otherwise the child seemed brighter.

May 5th. There was general improvement; patient was sitting up; less tenderness except at the seat of the furuncle.

May 8th. Deep reflexes were still absent. The gait of the patient resembled steppage; limbs very weak; no response to electric current.

May 16th. Patient left the hospital much improved. She was last seen in September, 1912, in perfect health.

Herter (4) reported a case of multiple neuritis in a child three years of age which was due to acute alcohol poisoning, where the temperature showed a drop below 98° F. He was also inclined to diagnosticate the case as meningitis till the symptoms cleared up.

This case presented several features which resembled very strikingly the alcoholic type of multiple neuritis, viz., 1, the low temperature; alcohol reduces body temperature. 2. Pain in the legs; Zappert (5) lays stress on pain along the nerve trunks as a symptom of alcoholic neuritis. 3. The loss of memory; Bury (6) holds that failure of memory is one of the earliest symptoms of alcoholic neuritis. 4. Trophic changes in the form of furuncles were prominent in this case; Muratow (7) never met a case with trophic changes in children with polyneuritis. 5. The history of an alcoholic father; Tomlinson and Freeman (8) state that children of syphilitic, alcoholic, gouty, tuberculous parents are victims of degenerative diseases in the nervous system. 6. The positive statements of the mother that the child had no sore throat and the behavior of the case excluded diphtheria as the cause of neuritis. The alcoholic father may have been the cause of the child's trouble.

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4101 TWELFTH AVENUE, BROOKLYN.

A CASE OF PSORIASIS.

By J. EPSTEIN, M. D.,
New York.
Clinical Assistant in Medicine, Vanderbilt Clinic; in Diseases of Children, Mount Sinai Hospital Dispensary.

This case is reported because of the very good results it gave me under a treatment which is not new, but in a disease which is difficult to cure.

CASE. Miss Z., aged twenty years, of unimportant past and family history, came to me complaining of a skin disease which began six months ago with a few red spots on the left thigh, which soon increased in number and size. In a few weeks after the onset, a similar eruption appeared on the right arm, the red patches later becoming gray. Two months ago, and within a short time, the entire body was covered with this eruption. On examination I found that she was covered from head to foot with psoriasis.

The patient was treated by two physicians before she came to see me, with no benefit.

I ordered thyroid extract, three grains, three times a day, and a ten per cent. chrysarobin ointment to be used in rotation, one night on the upper extremities, the next night on the lower extremities, and the following night on the trunk. She was also told to take a warm bath three times a week with two tablespoonfuls of sodium bicarbonate dissolved in the water, using ordinary soap for cleansing purposes.

The good results at the end of a week's treatment was very striking. The same treatment was continued for another two weeks, when nothing was left of the psoriasis except in a few places reddish areas where they once existed.

One is inclined to wonder what credit in this treatment is due to the thyroid action. Chrysarobin is an old and tried remedy in psoriasis with uncertain results, and in this particular case it had been used only once in three days on each particular spot. I think the chrysarobin action could not account for the excellent results and the good effect of the thyroid seems very suggestive.

225 HENRY STREET.

TETANUS SUCCESSFULLY TREATED WITH ANTITETANIC SERUM.

By Lewis J. Friedman, M. D.,
New York,
First Assistant House Surgeon, Volunteer Hospital.

I have frequently heard of physicians expressing their doubts as to the value of antitetanic serum in the treatment of tetanus. Personally, I also felt so inclined because I have seen two cases terminate in death, although the serum has been administered in heroic doses.

The behavior of the case that I am about to report with the serum treatment convinced me to my satisfaction that antitetanic serum is a specific if given in time.

Case. J. P., aged nineteen years, Greek, had his left hand caught in an ice cream machine, sustaining dedermatization of palm and fingers, and laceration of tendons of both middle and little fingers. Patient had tenorrhaphy and dermatorrhaphy performed under a general anesthetic, after a cleansing bath of the hand. After two well spent days, the patient's temperature shot up to 103° F. and varied between 101° and 104° F. for the next ten days, while after that it varied between 100° and 102° F. for another period of sixteen days. A sponge bath was ordered periodically for the pyrexia.

On the twelfth day the nurse reported that the patient could not open his mouth as usual and could not chew his food on account of rigidity of the muscles of mastication. Physical examination revealed the presence of trismus, rigidity of the neck, back, and abdominal muscles. There were also twitchings of the facial muscles and those of the lower extremities, and a general irritability.

An initial dose of 1,500 units was given subcutaneously. For the next three days, he received 5,000 units three times daily into the superficial veins of the arms. Phlebitis developed which was readily relieved by cold applications. For the following six days he received two injections daily, and for six more one daily. These were administered subcutaneously.

In all he received 136,500 units of the serum[1]. On account of excessive irritability the patient received an olive oil solution of sixty grains of chloretone as required *per rectum*, which he retained.

The antitoxine was discontinued on the fifteenth day of the disease, when the rigidity was practically gone. The skin and tendons involved in the impaired hand sloughed off, and the area healed by granulation. The patient was discharged thirty-nine days after admission to the ward, feeling first rate.

I should like particularly to thank Dr. Ralph A. Stewart, visiting surgeon to the Volunteer Hospital, for permission granted to report the case.

93 Gold Street.

Abstracts and Reviews.

THE SCIENTIFIC BASIS FOR THE ARTIFICIAL FEEDING OF INFANTS.*

By John Howland, M. D.,
Baltimore,
Professor of Pediatrics, Johns Hopkins University.

It has been only within the nineteenth century that very much attention has been given to the matter of the artificial feeding of infants. The problem was approached in a purely empirical manner and, by the slow elimination of methods which were shown to be harmful or not suitable, we have arrived at very satisfactory methods. This empiricism ruled the field until within the past twenty years and, by the adoption of some one or other of the laboriously worked out methods, one was able to feed the infant artificially by the rule of thumb application of the teachings of any given school. As has been said, these methods were in general very successful, but there were not a few infants encountered, in health or in disease, who did not thrive upon any of the methods in vogue. Cow's milk had formed the common basis for all artificial foods, and the cause for the failure in the unfortunate instances was sought in this basic food. Analyses having shown that the protein content of the milk of the cow is much greater than that of human milk, this fact was made use of in attempts to explain the failures.

One of the earliest problems to arise was that of deciding the proper quantity of food to be given to a child in the artificial feedings. The solution was approached by metabolic methods; that is, by the measurement of the metabolism of the infant at different times. This means was unsatisfactory because it was possible to carry it out for only brief intervals, not over four hours at a time, and during these intervals the infant was kept quiet, so that the results were not typical of the total daily metabolism. Valuable information was obtained, however, from calorimetric studies made upon the sleeping infant, but these were not such as to give the solution of the question as to how much food should be given at each artificial feeding.

The statistical method was also adopted, consisting in the careful weighing of the infant from day to day after his nursing. The error of this method lay in the fact that it was carried out only upon those infants that were breast fed, and the breast milk is subject to great variations in composition at different feedings and even at different times in a single nursing. Hence this gave no accurate information as to the amount of food, in calories, which was needed for an infant of any given age. Even when these studies were combined with estimations of the excreta the results were not adequate for the solution of the problem. Now that it is possible to feed an infant artificially and satisfactorily, it should be possible, by painstaking weighings from day to day over long periods, to obtain an accurate determination of the caloric needs of the average infant. Such studies cannot be carried out in hospitals, for the infants in hospitals never thrive as do those similarly fed in their homes. This method, then, offers an opportunity for the practitioner to solve the problem by such weighings of infants fed in their homes, and fed upon milk made up in some milk laboratory so that the composition of each feeding shall be accurately known.

We have said that the excess of casein, or proteid, in cow's milk was blamed for the failures of this as a food. Two principal theories have been offered to explain how this may be at fault.

The first is that there is a difference in the mode of absorption of cow's milk casein from that of the

[1]The serum used was that supplied by the New York city board of health.

*Summary of a lecture delivered before the Harvey Society at the Academy of Medicine, New York, March 29, 1913.

human casein. It has been held that this cow's casein in part passes through the intestinal wall unchanged and is absorbed as such. This contention was supported by experiments upon the permeability of the infant's intestinal mucosa for bacteria, etc. The experiments, however, were faulty, and we now have proof that such absorption of the cow's milk protein in an unchanged form does not take place, except in the rarest of cases. If it was so absorbed, being an *artfremdes Eiweiss,* that is, a foreign proteid, an anaphylactic hypersusceptibility toward this form of protein would be promptly developed. That such is not the case is readily demonstrated, and has been shown repeatedly. We must conclude, therefore, that cow's casein is not absorbed as such from the intestine of the human infant.

The second theory was to the effect that *artfremdes Eiweiss* underwent a different catabolism in the infant's intestine from that of the human casein. This difference in catabolism was supposed to lead to the production of toxic products which were absorbed and which gave rise to the faulty nutrition, or to the unfavorable symptoms sometimes encountered in the artificial feeding of infants. This theory was also supported by experiments, but these have been shown to have been defective. Recent careful studies have shown that there is absolutely no difference in the completeness of the digestion of the casein from cow's milk, and that the end products are precisely the same as in the case of the human protein. This theory, then, like the first, can no longer be accepted.

Just why cow's milk fails in some instances cannot be explained upon the different protein content alone, and it is altogether probable, from a large number of studies, that the proteid is not at fault. At least, no injurious effect has ever been noticed in properly controlled cases as a result of excess of proteid in cow's milk.

The human infant has an enormous capacity for the retention of nitrogen and an equally striking avidity for this element. This nitrogen retention has three offices: 1. To replace the nitrogen lost in the wear and tear on the tissues; 2, to supply a small amount of energy; 3, to supply the material for growth. A very small amount is used for the second purpose, a somewhat larger portion for the first, and about fifty per cent. for the latter. It is to be noted that the proteid nitrogen of cow's milk is retained quite as well as is that from the human milk.

Turning to the question of fat in the cow's milk, it is well known that the infant's tolerance to this ingredient is very variable. It is also known that when once this fat intolerance is developed, it persists longer than is the case with any other of the food ingredients. Fat in excess is known to retard the emptying of the stomach, and this gastric fat retention is even selective for certain forms of fat. The fats so retained undergo butyric acid decomposition, become irritant, and so cause vomiting. Another factor in the dangers of excessive fat is that the fats, being passed out mainly as soaps, bring about an excessive loss of calcium, which ingredient is highly essential to the nutrition of the growing infant, as, together with the nitrogen, it plays the so called most important rôle in the synthesis of the body proteins. The development of "soap stools" is due to a combination of the following factors: The presence of a moderate amount of fat; a sufficient amount of casein and calcium; and an absence of a sufficient amount of carbohydrate. The condition can be overcome by the addition of carbohydrate alone.

The diarrhea induced at times by fat is due to still another factor. The fats of cow's milk may undergo decomposition in the intestine with the liberation of the lower fatty acids which are irritant to the intestine. These cause excessive elimination and carry with them, in combination as soaps, a great excess of the alkaline salts. This loss of alkali causes a relative acidosis, which, in turn, leads to an excess in ammonia formation and to its elimination in the urine. This chain of changes is not specific for fat indigestion, but is secondary to the loss of alkalies and may be the result of vomiting or of starvation.

The carbohydrates and sugars in the diet of the infant supply the energy chiefly. The only sugars which are used are the disaccharides, and of these the one generally employed is lactose or saccharose. Maltose is not employed as such, owing partly to its excessive expense, but it is used, along with many other sugars and some carbohydrates, in the form of the malt soups, but these are seldom applicable to the feeding of infants in the very earliest months of life. The infant's limit of tolerance for carbohydrate is very high when he is normal and healthy. These foods are probably seldom at fault in the artificial feeding of the infant with cow's milk.

The last important ingredient of the infant's food is the mineral matter. Upon this subject there have been no experimental observations made which give concordant results. The mineral metabolism in breast and artificially fed infants is materially different. There are many experimenters who hold that cow's milk whey is most at fault in the failure of this food. They have found that the feeding of infants upon a mixture of fat and protein from cow's milk with the whey from human milk, enables the child to thrive normally, whereas, when cow's whey is mixed with human fat and protein, the child does not thrive. This has been attributed to the difference in the salts in the whey of the cow's milk. These salts, and others, have been experimented with, but the experiments are not conclusive, and it is probable that the whey alone is not at fault; at least there is no unequivocal evidence to show that such is the case.

It is probable, in view of the facts related, that we have still far to seek before we can speak definitely as to what the cause of the occasional failure of cow's milk may be. It is noteworthy that the studies upon the individual ingredients have tended to show in the case of each that it alone was not at fault. From this we are led to the conception that the difficulty lies in some subtle interrelation existing between the several ingredients. It is probable, furthermore, that the defect is not the same necessarily in any two cases. The matter is so intricate and complex that its solution must remain for the future. One guiding law must be laid down at present for

the establishment of a criterion by which to judge of the success of any method of feeding; i. e., the superiority or success of any method of feeding must be judged solely by the clinical results obtained. The results must not be considered for weeks or months merely, but must be judged by the ability of the method to carry the infant into childhood with all his mental and physical powers equal to those of the breast fed infant. Methods which depend upon the estimation of the metabolism of the infant are too fragmentary to be of any real value in the estimation of the adequacy of any mode of artificial feeding.

Our Readers' Discussions.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

CXXXII.—How do you treat obstinate chronic bronchitis in the middle aged? (Closed March 15th.)

CXXXIII.—How do you treat influenza, especially in view of sequelæ? (Answers due not later than April 15th.)

CXXXIV.—How do you treat muscular rheumatism? (Answers due not later than May 15th.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short, if practicable no one answer to contain more than six hundred words; and our friends are urged to write on one side of the paper only.*

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of $25 for the best essay submitted in answer to Question CXXXI was awarded to Dr. Jacob Bressler, of New York, whose article appears below.

PRIZE QUESTION CXXXI.

THE TREATMENT OF PSORIASIS.

By JACOB BRESSLER, M. D.,
New York.

We treat disease most successfully by properly understanding its etiological factor or factors. In the case of psoriasis, however, no valuable etiological information is given us. What with the parasitic theory believed by some, the neurotic theory of others, the gouty and rheumatic diathesis adduced by a third class, I have concluded that the sum total of all these causative factors amount to a large round o (zero). Therefore, having no well defined cause, we treat this disease from a standpoint of large clinical experience and according to the success we have had with various methods.

In our dermatological clinic, where a great many cases of psoriasis are seen annually, we find it convenient to classify them into three groups, so as to facilitate the treatment:

1. Those having only a few lesions.
2. Those having a moderate number of lesions.
3. Very severe cases, with psoriatic lesions all over the body.

Four methods of treatment are followed in our clinic:

1. External treatment.
2. Internal treatment.
3. Internal and external treatment combined.
4. Special treatment.

Prophylaxis. In the beginning we always make it a point to inquire into the general health of the patient. Usually, patients are in good health and no general treatment is needed. If, however, associated pathological processes do exist, we treat them first. This has often resulted in a cure of the skin lesions. In these latter cases we institute proper treatment for the existing disease, together with general tonic treatment, country air, change of diet, etc. This method often works wonders, but as soon as the general health again becomes poor, a recurrence of the psoriatic lesions is the rule. Restricted diet is another motto we advocate to our patients; those who follow our directions do best. Recognizing that an outbreak of psoriasis is often precipitated by an acute debauch or the regular use of alcohol, we strictly prohibit any excesses if the patient expects relief from our treatment. In people susceptible to attacks, the least traumatism, as scratching or rubbing, will bring out the lesions; therefore we warn patients against use of the tight belt, suspenders, or tight lacings.

Actual treatment. No matter of what location, the parts are first thoroughly washed with spirit of green soap and water; then, for the first variety—a few lesions on any part of the body except face and scalp—we paint with:

℞ Chrysarobin, ...ʒss to ʒi;
Salicylic acid, ...ʒss;
Flexible collodion, ...ʒi.
M.

We also employ the chrysarobin as an ointment, this being a more active form of treatment for some cases:

℞ Chrysarobin, ...ʒii to ʒi;
Salicylic acid, ...ʒss;
Petrolatum, ...℥i.
M.

We continue to use the ointment until scaly lesions drop off, then we push the ointment a little longer, finally covering the remaining erythematous area with the zinc oxide ointment. In this way a few lesions are usually cured, but we never guarantee that an outbreak will not occur at any time in some other part of the body.

For the second variety—a moderate number of lesions—the same procedure is adopted, only larger amounts of chrysarobin ointment are used. With us chrysarobin is the drug of choice. It should be pushed until it produces a slight dermatitis, then covered with zinc oxide ointment. Each night the drug is applied and in the morning a bath is taken. In some individuals we find that a five per cent. chrysarobin ointment will produce a severe dermatitis, and so we use only a two or three per cent. ointment. We usually begin with a three per cent. and gradually increase until ten or fifteen per cent. chrysarobin is used. The discoloration of the skin from the drug we do not fear, as it soon passes away. Never use chrysarobin on face or scalp; we

have seen a number of cases of severe conjunctivitis as a result. For the scalp use tar, ammoniated mercury, or pyrogallol ointment.

Next best result is obtained with an ointment of pyrogallol:

℞ Pyrogallol, ...ʒi to ʒii;
Petrolatum, ...℥i.
M. ft. unguentum.

This drug produces less of a dermatitis than chrysarobin and may be used in large amounts. Tar is a famous and reliable old remedy, especially when combined with mercury. It is especially adapted to face and scalp lesions, but care must be used not to prescribe too large doses of mercury, because of danger of absorption and poisoning. We usually give:

℞ Oil of cade, ...ʒi;
Ammoniated mercury, ...℈ii;
Petrolatum, ...℥i.
M.

Many other drugs are used, as thymol, oil of turpentine, salicylic acid, etc., but we confine ourselves to the drugs already mentioned, with very good results.

Internal treatment. If the continuous use of chrysarobin ointment does not help, and especially in extensive chronic cases, we are in the habit of stopping all external treatment and beginning a course of internal treatment alone for a period of from two to four months. We use arsenic in the form of Fowler's solution in five to fifteen minim doses three times a day after meals. Or, we sometimes use the cacodylate of sodium by deep injections with excellent results, especially in the hospital cases. We continue to use arsenic from two to four months, and in some cases get very decided cures. Not all cases, however, will respond to internal treatment, and in such we try the combined internal and external treatment with chrysarobin ointment. A good many patients have been cured by this combined method. The internal administration of potassium iodide has benefited some of our chronic cases.

Special treatment. The use of the Röntgen rays for chronic obstinate patches has given us excellent results with almost permanent cures. We expose the patient's lesions for about two to seven minutes, three times weekly, using a soft tube and placing the parts from six to twelve inches from the target. Treatment is given for two weeks, then suspended for two weeks; then another course is allowed. From four to eight weeks' treatment cures the psoriatic patch. Recently we had a very severe case of psoriasis in the dermatological wards of the hospital (Mt. Sinai). I gave this patient an intravenous injection of 0.45 neosalvarsan to see how it would influence the lesions. In forty-eight hours the lesions seemed to be getting smaller, but in a few days they were the same as before the injection. I gave him another dose of 0.45 neosalvarsan seven days later, but it had no effect on the disease whatever, and we had to continue our old treatment with chrysarobin ointment.

Prognosis. From our wide experience in the clinic and hospital we are all agreed that an outbreak of psoriasis can usually be cured, but as for the permanency of such cure, none can be promised. The disease lasts for many years, and those who have treated psoriasis for any length of time will readily testify that recurrence is the rule and will do best never to promise a permanent cure, no matter what treatment has been followed.

319 EAST EIGHTH STREET.

Dr. Ralph Boice, of Sisterville, W. Va., writes:

By psoriasis we understand a chronic, nearly always incurable, disease of the skin, of doubtful origin. A so called skin disease, it depends upon a general condition which repeatedly produces the eruption. The fact that in most patients with psoriasis it is hard to discover appreciable reasons for the existence of a skin disease, should lead to a most thorough investigation of every organ in the body and of all the excretions.

Psoriasis seems dependent, to a great extent, upon a blood state closely allied to that belonging to gout and rheumatism—the uric acid diathesis. Occurring in males more often than in females, and by no means rare in infancy, it is most frequently met with in subjects between ten and thirty years of age.

The primary lesions are typical and consist of one or more small, red points which quickly become covered with firmly adherent scales, of a shining, silvery, mother-of-pearl color. The localization is mainly on the extensor surfaces and the scalp. The lesions heal frequently at the centre (psoriasis annularis), but at times spread at the periphery, the coalescence of several patches causing symmetrical figures to be formed on the skin (psoriasis gyrata vel figurata). The patches may assume the size and shape of silver coins (psoriasis nummularis), or they may appear like spots of grease or mortar spattered over the skin (psoriasis guttata).

The treatment should be general and local. That metabolism should be made to go on as nearly normal as possible, I insist that the patient take systematic physical exercise, starting in the morning with dumbbells or Indian clubs, followed by a cold sponge bath and brisk rubbing of the skin. As much exercise in the open air as is possible is also ordered.

The diet is regulated according to the needs of the particular case, but a restriction as to meat, especially beef and mutton, is ordered in nearly all cases.

I impress the patient with the fact that the lesions must be kept as free from scales as possible. This can be accomplished in mild cases by washing the lesions in a saturated solution of salicylic acid in alcohol, or with spirit of green soap (Sapo viridis two parts, alcohol one part). With numerous lesions and thick scaling, alkaline baths of sodium bicarbonate, amonium chloride, or borax, with the addition of one half to one ounce of oil of cade, will prove of benefit.

In acute attacks and with the lesions decidedly inflammatory in character, I have often started treatment with some mild ointment such as calamine, forty grains to the ounce; subgallate of bismuth, forty grains to the ounce, or ammoniated mercury, ten to twenty grains to the ounce. Some cases respond nicely to these ointments, but the majority do not.

Chrysarobin is the remedy *par excellence* for

psoriasis, and I have always found it efficacious in clearing up the lesions. I use it in collodion, forty grains of chrysarobin to the ounce of collodion. Apply this to the lesions, and after the ether has evaporated paint over with plain collodion. This prevents staining the skin and clothing and keeps the scales *in situ* for two or three days, when they can be removed and a new application made. I have better results from this treatment than any other. I have used tar in the form of oil of cade and liquor carbonis detergens. Pyrogallic acid has been much heralded, but I have never tried it. It is toxic if used over large areas.

Internally, arsenic seems the best drug. I have used it in various forms, but for the past two years I have been using subcutaneous injections of cacodylate of sodium with excellent results. Starting with three quarters of a grain, I increase the amount up to three grains daily, continuing this for a week, then after an interval of ten days repeating the three grain doses for another week. In some cases the clearing up of the lesions is remarkable, in others slower, but with good results in all.

In patients with the uric acid diathesis the salicylates have proved efficacious. Strychnine, assisted by the static machine, has been beneficial when the nervous system was at fault. Potassium iodide has proved useful in some cases when given in full doses.

On the whole, I have been fairly successful in treating psoriasis, especially since I began the use of sodium cacodylate. I have been fortunate, inasmuch as the great majority of my cases were of the mild type, with no great areas of involvement.

The following case, taken from my case records, shows the best results I ever had:

CASE. Mrs. D., aged thirty-two years, married, weight 145 pounds, well nourished, general health excellent, family history good. Eruption on right arm and forearm. Tried various salves and powders at home with no result. Saw her first, January 12, 1911. Eruption spreading at periphery. Eight patches of various sizes, moderately scaled. Washed lesions with spirit of green soap, dried with sterile gauze. Applied chrysarobin in collodion and painted over with plain collodion. Gave three quarter grain subcutaneous injection cacodylate of sodium. Repeated cacodylate every day for a week and chrysarobin every two days. At end of week three small patches had healed. Increased cacodylate to two grains daily for another week, and chrysarobin as before. At end of second week only two large patches remained, which were decreased from former size about one third.

Gave ten days' rest from cacodylate, but continued chrysarobin every three days. Both patches were reduced in size and scaling was very light. Increased cacodylate to three grains daily and by end of week all the lesions were cleared up. Discharged February 16th and has had no recurrence to date. During whole course of teatment patient had taken much outdoor exercise, and had been allowed meat but once a week.

Dr. Abr. B. Pemsler, of New York, observes:

In my service at the New York City Children's Hospital and School on Randall's Island, I have occasion to come in contact with numerous skin conditions, and I find psoriasis of rather frequent occurrence in children; I should judge about from three to five per cent. of all dermatological cases in this institution. The only etiological factor I have found which seems of any importance is heredity.

After employing numerous methods of treatment, I have adopted the following as giving the best results:

Upon admission to the ward, the patient is given a hot bath, body is scrubbed with soap, and as many scales as possible are removed.

If the lesions are not very large or numerous, I employ a six per cent. chrysarobin ointment. This is applied to all spots daily. A valuable method to employ this, so that it will not soil the clothing, is in the following prescription:

℞ Chrysarobin. } .....āā grs. 1;
Salicylic acid, }
Ether, ...ʒi;
Flexible collodion, q. s. ad. .....ʒi.
M. Sig.: Apply with camel's hair brush.

This forms a coating over the lesion, which should be removed every other day and a new application made.

If the lesions are more diffuse, I prefer a ten per cent. ammoniated mercury ointment, as this is less apt to produce a dermatitis. This ointment is applied daily. Care must be taken that the mercury is not absorbed in sufficient quantities to produce poisoning.

In conjunction with these local remedies, I regulate the bowels by drachm doses, morning and evening, of the aromatic fluid extract of cascara sagrada.

The diet consists of easily digested food with a minimum of meat. No rare meats, spicy food, tea or coffee, are permitted.

For external medication I give arsenic, chiefly in the form of Fowler's solution. This is given in graded doses, beginning with one minim, three times a day, increasing up to a certain limit, depending upon the age of the patient.

After the drug has been taken for a few weeks, it should be stopped for a day or two and the dose should be decreased. Care should be taken during its administration, and if toxic symptoms, such as puffiness under the eyes, develop, it should be discontinued at once.

The results of the foregoing treatments have, as a rule, proved very satisfactory, an improvement occurring within a few days. Several weeks and sometimes even months are, however, necessary to cause all lesions to disappear, and recurrences are rather frequent after the treatment has been discontinued for a time.

Therapeutical Notes.

Treatment of Typhoid Fever.—Arnozan and Carles, in *Semaine médicale* for December 4, 1912, are credited with an investigation of the value of administering tincture of iodine internally in this affection. Lortat-Jacob having shown that iodine is a powerful agent in the production of a leucocytosis, with which is coupled a relative mononucleosis, the drug seemed particularly indicated in typhoid infection. Forty-four patients received the tincture in daily doses of fifteen to twenty-five minims (one to 1.6 c. c.), in admixture with wine of cinchona or milk. While other measures were simultaneously employed, the conclusion was reached that the drug was of considerable value in the treatment. Many patients who had been admitted with serious symptoms, such as profuse diarrhea, distention, nausea, etc., after having already undergone various forms of treatment, showed

prompt improvement when receiving iodine. Recovery was generally prompt, especially where the measure had been begun early. Complications were not prevented, however. Where relapses took place, they were slight and occasioned no alarm.

Vaccine Treatment of Acute Tonsillitis.—S. P. Shivdas, in the *Lancet* for October 26, 1912, reports a case of very severe tonsillitis which was found to be of pneumococcal origin and for which a large variety of local remedies was tried for four days without effect. Vaccine treatment was then decided on, and material obtained from the abraded surface of the tonsil, after spraying the latter with a solution of citrates and chlorides, was implanted on blood agar. A preliminary dose of fifteen millions of pneumococcus stock vaccine was given, followed, two days later, by a like dose of the autogenous vaccine prepared. The first injection caused aggravation of the symptoms for ten hours, but after this the pain, swelling, dysphagia, and fever steadily decreased, so that two days after the autogenous vaccine injection the patient could eat without difficulty. No measures were employed during the vaccine treatment beside the injections themselves.

Treatment of Flatulence and Colic in Infancy.—George Frederick Still, in *Pediatrics* for July, 1912, reminds us that in babies with upset digestion it is usually necessary to reduce both the strength and amount of the food given below that natural for infants of corresponding age. Where milk is being used, screaming will generally be stopped most quickly by giving a very dilute peptonized milk without added cream for a few days. The mere discontinuance of barley water often brings prompt relief, and in the less severe cases the addition of sodium citrate, three grains (0.2 gramme) in a teaspoonful of water, to each feeding, is sometimes sufficient.

As a carminative for overcoming the abdominal pain the author uses the following:

℞ Tincturæ cardamomi compositæ, ...♏i (0.06 c. c.);
Sodii bicarbonatis, ...gr. ii (0.12 gramme);
Glycerini, ...♏v (0.3 c. c.);
Aquæ, q. s. ad .....ʒi (4.0 c. c.).
M. Sig.: Three or four times daily, ten minutes before a feeding.

Or, one minim of the aromatic spirit of ammonia may be substituted for the cardamom tincture, or one minim of the following combination, which is official in the *British Pharmacopœia*, given:

℞ Asafœtidæ, ...gr. vi (0.4 gramme);
Liquoris ammoniæ fortioris, ...♏viii (0.5 c. c.);
Alcoholis, ...♏lxxii (5.0 c. c.).
M. ft. solutio.

Magnesium carbonate, two grains, may do more good than the sodium bicarbonate, or sodium phenolsulphonate, one to two grains, according to the age of the infant, may be used for its possible antiseptic effect.

Bismuth is distinctly valuable if gastric flatulence is very constant. Three or four grains of the subcarbonate with two grains of sodium bicarbonate, suspended in a drachm of water by two grains of compound tragacanth powder (tragacanth, one part; acacia, one part; starch, one part; sugar, three parts), make an appropriate combination, but bismuth should be used only a few days, as its continued adminstration tends to aggravate the constipation so often present. Nux vomica, in doses of one quarter minim of the tincture, for an infant up to six months of age, and one half minim from six months to one year, is useful where distention is marked.

Syrup should be avoided in prescribing for these cases, as it may favor flatulence. Chloroform water or spirit of chloroform, with or without the addition of glycerin, should be substituted as a sweetening agent.

Treatment of Erysipelas.—Oddone, in *Semaine médicale* for November 27, 1912, is stated to have found the administration of iron salicylate of great value in this affection. It was prepared by the author by first dissolving

℞ Sodium salicylate, ...gr. xxx (2 grammes);
Water, ...ʒx (40 grammes);
then add:
Solution of perchloride of iron, ..ʒi (4 grammes);
Glycerin, ...ʒss (15 grammes);
Water, enough to make .....℥iv (125 grammes).
M. Shake. Sig.: Five teaspoonfuls every two hours.

The resulting mixture is fairly well borne by the stomach, and in the rare cases in which it causes nausea, perfect tolerance can soon be attained by diminishing the dose.

This treatment was tried in 35 severe cases of erysipelas, and it was found that after twelve hours a reduction in the temperature by crisis generally took place, its level even falling below the normal, although no collapse effects were observed. Simultaneously all the signs of profound general toxemia—coma, delirium, intense headache—as well as the local pain, were seen to disappear. While the erysipelatous process itself did not subside as rapidly as the general symptoms, its progress was checked, and recovery took place earlier than would otherwise have been the case.

Coley's Fluid in Melanotic Sarcoma.—H. H. Greenwood, in the *Lancet* for September 28, 1912, reports a case of melanosarcoma of the shoulder in which recurrence had taken place in ten days after excision and Coley's fluid was given as a forlorn hope. The first injection consisted of one half minim of the fluid, diluted with twenty minims of sterilized water, and was given deeply in the pectoral muscles below the nipple. Temporary collapse followed. Injections were then continued on alternate days in increasing doses, the site of the injection being each time brought nearer to the tumor, until in a month's time the dose had been raised to twenty minims and was made into the site of the growth. Later the injections were given less frequently, and, finally, at monthly intervals. Although each injection gave rise to a hard, brawny swelling, and on several occasions the reaction was very marked, the influence on the tumor was excellent. The growth gradually disappeared, and eighteen months after the beginning of the treatment the general health was good. Greenwood thinks it reasonable to conceive of malignancy arising from lack or excess of some internal secretion, and that Coley's fluid provokes the laggard secretory organ to renewed activity or restrains the exuberance of the gland at fault.

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THE DANGERS OF ANTITYPHOID VACCINES.

An important contribution to the literature of typhoid prophylaxis comes from Doctor Louis and Doctor Combe, of the French army, assistants to Professor H. Vincent in his laboratory, of antityphoid vaccination at the Val-de-Grâce in Paris (*Monde médical,* December 5, 1912). They have reported 115 cases of typhoid among the unprotected in an epidemic on the Algero-Moroccan frontier in 1911, but none among the vaccinated. Similarly in the Avignon epidemic, July to September, 1912, the 687 unvaccinated soldiers had 155 cases with twenty-one deaths, while the 1,366 protected soldiers had no cases at the date of publication. Vincent uses a polyvalent vaccine sterilized by ether.

These excellent results indicate that a higher percentage receive some immunity than by the English vaccine, but give no indication as to how long the protection lasts. The French think it should not wear out for two and a half years at a minimum, and that from analogy with typhoid fever it should last from five to seven years. From the English and American experience we are justified in greatly reducing this estimate, for it is now advised to revaccinate every two years. The surgeon general of our army reports that one third of the eighteen cases of typhoid occurring in 1912 were among the "immunized."

Interest centres in the long list of contraindications. Vincent insists upon making a most careful examination of all persons to be sure that they are in a condition of perfect health in the strictest sense of the word. The operation must not be done if any of the following conditions exist: Pharyngitis, pains in the limbs, influenza, enteritis, stomach troubles with fever, coryza, bronchial and pulmonary affections, acute gonorrhea, primary or secondary syphilis, most chronic affections, cachectic state, unsatisfactory general state, heart diseases, Bright's disease, diabetes, and mucomembranous enteritis. In orthostatic albuminuria, the injections may cause albumin to appear. The injection is to be postponed in the debilitated, exhausted, or fatigued (want of sleep, preparation for examination, etc.) until the general health is satisfactory, and it must not be given to menstruating women. The vaccine will awaken a dormant malaria and bring on attacks in the same way as an injury, fatigue, or chilling, but this can be prevented by administering a gramme of quinine hydrochloride seven hours before the expected chill. Syphilitics who do not present active symptoms and are not debilitated may safely take it.

Special efforts must be made to detect tuberculosis, for the vaccine acts in the same way as tuberculin, with constitutional reaction and fever lasting perhaps several days—a fever declared to be due to the tuberculosis and not the vaccine. In fact, an abnormal reaction causes suspicion of latent tuberculosis, and the French surgeons have had several such cases in which careful search revealed lesions which had previously escaped notice. They make an absolute rule to avoid vaccinating persons with active lesions in any form. "Cured" cases must be treated cautiously, beginning with smaller doses to feel the way, and discontinuing if any reaction occurs.

The report of Spooner, of Boston, that the vaccine brought out every latent disease, made us suspect that we were dealing with danger. A vaccine must be harmless. Vincent says that in from ninety-four to ninety-five per cent. the reaction is trifling or absent, in from five to six per cent. moderate, and that severe reactions are very rare unless tuberculosis is present. Since English and American observers report from two to four per cent. of severe reactions, it is likely that some of them were tuberculous.

We do not share Dr. F. F. Russell's pessimism as to the many generations our sanitarians will require to make this country as clear of typhoid as England and Germany (Harvey Lecture, February 8, 1913; see this JOURNAL for February 15th, page 351), for the movement is already a strong one, but we agree

with him that in the meantime there will be people who are unduly exposed now and then and who should be vaccinated *if it is safe*—nurses, laboratory workers, and travelers. It would be a serious matter to fail to warn them of the dangers of the vaccine and let them decide which risk to run.

Russell has stated that no ill effects, such as found by Spooner, had been noticed in the army (*Journal of the American Medical Association,* October 12, 1912), but we presume that they will be noted and published now that Vincent has also called attention to them. We have been forcibly struck by the manner in which all vaccination advocates except Vincent have minimized the dangers and failures, and the great newspaper publicity given to the attacks of typhoid among the unprotected. It is, therefore, impossible to come to an accurate conclusion as to the benefits and evils. Until all the facts are published impartially the medical profession must hold the matter *sub judice.* As the vaccine acts like tuberculin, compulsory vaccination cannot be practised in civil life.

NEOSALVARSAN IN THE LOCAL TREATMENT OF SOFT CHANCRE.

Some time ago, Lebenthal tried salvarsan in the local treatment of soft chancre, but obtained untoward effects. This, it must be said, might have been anticipated when we recall that this substance, when exposed to the oxygen of the air or of watery solutions, becomes oxidized and that the toxic action of the oxide is twenty times more active than that of salvarsan in its original state. The effects of subcutaneous injections in the treatment of syphilis, which caused the use of this method to be abandoned in favor of the intravenous route, should also have suggested the likelihood of morbid effects, since, as is well known, tissue necrosis is produced. The untoward effects witnessed by Lebenthal only served to verify the teachings of clinical experience, that tissues adjoining the soft chancre underwent necrosis.

In a recent monograph (*Thèse de Paris,* 1913) Melun contributed valuable observations indicating how the untoward effects of salvarsan, when locally applied, could be avoided and its beneficial effects insured. His method was to mix the salt with liquid petrolatum in the proportion of one part of salvarsan to ten of petrolatum. In view of the explanation we have given in the preceding paragraph the petrolatum simply prevents oxidation of salvarsan, and the marked toxicity it acquires as a result of this process is forestalled.

The best results, however, were obtained by using neosalvarsan in the same manner. It seemed to produce less irritation than salvarsan and not to coagulate albumins, while interfering in no way with osmosis or the vitality of the tissues. Moreover, it presented the marked advantage of penetrating more energetically the pathological structures. Cicatrization of the soft chancre was found to occur very rapidly at first, the process of healing becoming less active after this first phase. Nevertheless, even large, soft phagedenic processes yielded in from six to twelve days.

Obviously, this need not banish the use of solutions of salvarsan or neosalvarsan, but bearing in mind the reducing activity of these agents, only weak solutions should be used. Thus Rosenmeyer recently obtained excellent results in the treatment of parenchymatous keratitis due to congenital syphilis by means of local applications of but a two per cent. solution. This treatment arrested promptly the morbid process, which had failed to yield to classic measures. He also used neosalvarsan in its normal state, but in view of the chemical properties of the salt, prudence imposes itself particularly in ophthalmic therapeusis.

THE DIAGNOSIS OF ACUTE SUPPURATING HEMATOCELE OF THE THYROID GLAND.

In making a diagnosis of acute suppuration arising in an hematocele of the thyroid gland, there is no necessity of discussing the possible errors that occur in differentiating between an hematocele and other enlargements of the organ. The pathological process under consideration is rapid in development; the gland suddenly increases in size to such an extent that phenomena of compression occur at the same time that evident indications of infection appear.

If the hematocele always offered the same clinical picture, obviously the diagnosis would be easily made, but unfortunately, according to the factor giving rise to it, the symptoms vary greatly; while, on the other hand, there is similarity with the other numerous types of thyroiditis. For example, a grippal thyroiditis may present points in common with a grippal infection of an hematocele. In this type of strumitis, contrary to what is observed in the typhoid form, the initial symptoms are usually very much accentuated, because the organism is not severely infected.

The first phenomena develop during convalescence from an attack of influenza, beginning with a chill and a swelling in the neck. Pain is generally dull, but may increase by pressure or movements of the neck. Phonation, deglutition, and contraction of the sternomastoids are all painful, and in a few days the tumefaction, although distinctly lim-

ited, increases, becoming hard and tense. The local temperature is raised. Then dyspnea, dysphagia, and phonetic disturbances, compression of the large vessels, and other complications supervene.

The formation of pus gives rise to irregular chills, while the local symptoms may tend to improve, but usually the tumefaction increases and the pain is more acute.

The same applies to typhoid or puerperal strumitis, so it appears that the causative agent manifests its action in an identical way, either in an infection of the gland itself or in a purulent transformation of an endothyroidal collection of blood.

It is, however, important to make a correct diagnosis, because, although in many cases the treatment is the same, there are some in which interference would be dangerous. A thyroiditis has a greater tendency to involve the entire gland, while a suppurating hematocele remains localized in one lobe. Usually the infection of the gland begins with a marked chill and the temperature is higher than in a suppurating hematocele. And what may still better differentiate the two affections is the knowledge that there have been successive periods of sudden increase during the evolution of the struma, a characteristic evidence of endocystic hemorrhage. When there is any hesitation an exploratory puncture is justifiable.

It may be said that in cases of goitre developing in successive periods of sudden increase in size, the absence of lymphatic involvement, the mildness of the systemic symptoms, and a manifest development of the peripheral venous system in the neck should be very accurate indices in favor of a suppurating hematocele, although in some cases the diagnosis will have to be reserved.

MEDICAL STATISTICS OF THE LYING-IN HOSPITAL.

In the March *Bulletin* of the Lying-in Hospital of the City of New York, which hospital, by the way, was founded in 1799, Dr. Ross McPherson as registrar gives very interesting statistics. We observe that the number of confinements were 5,606, with 5,657 births, 525 women (9.36 per cent.) being brought in by the ambulance as emergency cases. Operative assistance became necessary in 731 cases (13.04 per cent.), many of which were brought in by the ambulance after having been treated at home by midwives or other physicians. There were 245 abortions, and the mortality is given for the mothers as 1.01 per cent. (fifty-seven women), for the fetus as 2.89 per cent. (165 fetuses), and 4.59 per cent. stillbirths (262). The high mortality of the mothers is accounted for by the above mentioned ambulance cases, while there was only one death of the total number of women (5,081) confined in the hospital. The high mortality among the ambulance cases brings up the question of the education of the midwives. This is discussed in a communication in the same bulletin by Dr. G. W. Kosmak, attending surgeon of the institution. The only solution this writer sees of this vital question lies in two methods, either suitably trained midwives or extended public lying-in charities. In New York State a six months' course of instruction is all that is necessary, a period which Doctor Kosmak thinks is absolutely insufficient. The poorer class of people cannot engage a physician, and must, therefore, depend upon the midwife or seek the help of a lying-in institution. This condition brings up the cases of confinement attended by midwives to forty-five per cent. But if this class of women should be cared for by hospitals, the number of these lying-in institutions would have to be greatly increased.

SUGAR IN THE TREATMENT OF WOUNDS.

About a year and a half ago, Kuhn recommended that the normal saline solution used in the treatment of peritonitis be modified by the addition of some four per cent. of glucose. Magnus, König's assistant in the faculty of medicine at Marburg, according to *Semaine médical* for March 19, 1913, has been using sugar in the treatment of wounds with surprising results. In large, septic wounds due to acute or chronic osteomyelitis, and in varicose ulcers of the leg sugar has proved most efficacious; tuberculous lesions only seem to be absolutely refractory to sugar. Beside its bactericidal and disinfectant power, sugar has a dissolving action on fibrin, which causes a rapid detergent effect on a wound, even after such dressings as clay, silver nitrate ointment, etc., have proved useless. Under the influence of daily applications of sugar, by a process of osmosis an abundant secretion is established, which keeps the dressings moist and prevents their adhering to the wound; an inveterate varicose ulcer becomes rapidly clean, odor disappears, and cicatrization is favored without the occurrence of exuberant granulations.

A fistula which had persisted after a joint resection for two weeks despite all the usual measures, healed in three days after the application of sugar; and Magnus reports equally gratifying results in operative wounds after purulent appendicitis, cholecystitis, and gland resections. He has yet to note the slightest contraindication to the use of sugar in wounds, and repeated examination of the urine fails to disclose any change attributable to the remedy even in cases where very large quantities had been applied in extensive loss of tissue.

UNPLEASANT WINDOW DISPLAYS.

The *Lancet* for March 22, 1913, takes certain shopkeepers in London sharply to task for exhibiting in their windows vaginal syringes, often with notices or pictures calling attention to the "ugly wares." The object of these syringes is well known

to men and women of the world, and, the English journal remarks, it is disgusting that appliances of the sort should be flaunted before decent people, and especially before children, who should not have such articles and their uses brought to their attention. Police interference being difficult, the *Lancet* thinks that neighboring shopkeepers, recognizing that proximity to such offensive displays is detrimental, should find a remedy.

"DIRECTIONS FOR TAKING."

In a recent issue of the NEW YORK MEDICAL JOURNAL attention was directed to the danger to the patient involved in labeling prescriptions "take as directed." This subject was discussed in Berlin, last summer, when the police president of that city issued, on July 12th, a circular to the medical association directing the attention of the members to the complaints made by pharmacists for careless prescribing by doctors. Special reference was made to the absence of directions for use, which made it difficult in many cases to control the correct reading of a badly written prescription, three instances of such errors being cited. In these particular cases "Rem. ctr. taeniam" (remedium contra taeniam) was understood and dispensed instead of "Pil. ctr. tussim" (pilula contra tussim); "Tinct. stomachic." (tinctura stomachica) was dispensed instead of "Pulv. stomachic." (pulvis stomachicus) and "Pil. ferr. arsenic." (pilula ferri arsenicosi) instead of "Tinct. ferr. arsenic." (tinctura ferri arsenicosi). The fact that this subject has received official notice in Berlin further emphasizes the importance of writing out in full, on every prescription, the directions for taking medicine.

Obituary.

GEORGE McCLELLAN, M. D.,

of Philadelphia.

Doctor McClellan, the noted anatomist, died on March 29th at his home, 1116 Spruce Street, Philadelphia, following an attack of some cardiac disorder. He was born in Philadelphia in 1849, the grandson of the founder of Jefferson Medical College and a nephew of General George B. McClellan. He made his preliminary studies in the faculty of arts of the University of Pennsylvania and graduated at Jefferson Medical College in 1870. After postgraduate study in Europe, he was elected surgeon of the Howard Hospital, Philadelphia General Hospital, and St. Joseph's Hospital. In 1873, he married Harriet, a granddaughter of Robert Hare. Subsequently he became president of the Philadelphia Medical Club. Doctor McClellan was an authoritative writer on scientific subjects, particularly on anatomy of which he was a master, and his *Regional Anatomy*, admirably written and magnificently illustrated from his own subjects, went through six editions and achieved the honor of translation into French. He was greatly esteemed by his friends and fellow practitioners and was noted for his courtly manners and charming disposition.

News Items.

Physicians' League of the Bronx.—This organization of Bronx physicians was organized recently for the avowed object of aiding to abolish hospital and dispensary abuses. The officers are. Dr. William H. Kahrs, president; Dr. J. A. Keller, general secretary; Dr. Gustave H. E. Starke, treasurer.

Arkansas Medical Association.—The annual meeting of the Tenth District of the Arkansas Medical Association was held in Rogers on May 22d. Officers for the coming year were elected as follows: President, Dr. J. L. Smiley, of Siloam Springs; vice-president, Dr. C. F. Perkins, of Springdale; secretary, Dr. I. A. Fergus, of Rogers; treasurer, Dr. W. A. Pickens, of Bentonville.

New Tuberculosis Hospital in Yonkers.—In addition to the Sprain Ridge Hospital for Incipient Tuberculosis, given to the city of Yonkers by Alexander Smith Cochrane, that city now has a municipal hospital for advanced cases of tuberculosis, partly due to the generosity of Mr. Cochrane, who donated the site for the building. This hospital has accommodations for forty patients.

New York Physicians' Association.—This association held its annual dinner on the evening of March 29th, at the Hotel Marie Antoinette. Dr. Percy Fridenberg, chairman of the dinner committee, was toastmaster. The address of welcome was delivered by Dr. Charles Herrman, president of the society, and among those who responded to toasts were Assistant District Attorney Frank Moss, Marcus Marks, and Carl Hauser.

Sixtieth Anniversary of the Sheppard and Enoch Pratt Hospital.—The trustees of the Sheppard and Enoch Pratt Hospital, Towson, Md., are planning to celebrate the sixtieth anniversary of the granting of the charter for the institution. While the hospital has been receiving patients for only twenty-one years, it was incorporated and a board of trustees named on May 24, 1853, Moses Sheppard, founder of the institution, being the first president of the board. It is expected that the celebration will be held either just before or just after the Congress of American Physicians and Surgeons, which will be held in Washington, D. C., on May 6th and 7th.

Medical Study of the Hydromineral and Climatic Resorts of France.—The thirteenth excursion with this study for its object will begin August 25, 1913, and continue until September 5th under the presidency of Professor Landouzy. The resorts of the southwest of France will be visited in the following order: Arcachon, Dax, Biarritz, Hendoye, Cambo, Salies-de-Béarn, Pau, Saint-Christau, Eaux-Bonnes, Eaux-Chaudes, Argelès, Barèges, Saint Sauveur, Gavarnie, Cauterets, Bagnères-de-Bigorre, Capvern, Barbazan, Siradan, Bagnères-de-Luchon. For further information, address Dr. Carron de la Carrière, 2 rue Lincoln, or Doctor Jouaust, 4 rue Frédéric-Bastiat, Paris.

A Warning Concerning an Italian Diploma Mill.—A number of prominent men in the United States have received offers of elaborate membership titles, medals, etc., from an institution in Palermo, Italy, styling itself the Académie Physico-Chimique, and requesting a five dollar fee. We have now heard from three sources that the object of the "Académie" seems to be a mercenary one. The last letter received contains the following: "The institution in question is not looked upon with favor nor does it deserve any consideration. It would even seem proper and legitimate to suspect that the institution, under the pretext of being an institution of science, is exercising an unworthy and low speculation."

Medical Association of the Greater City of New York.—A special meeting of this association, under the direction of Dr. L. Howard Moss, of Richmond Hill, chairman for the Borough of Queens, will be held in Jamaica, on Monday evening, April 7th, at 8:45 o'clock. The programme includes the following papers: Report of a Case of Perforating Ulcer of the Stomach, by Dr. Albert L. Voltz, of Queens; Report of a Case of Twin Pregnancy, Uterine and Tubal Combined, by Dr. Otto C. Stumpf, of Queens; Dystocia and the Unflexed Head, by Dr. A. Ernest Gallant, of Manhattan; Healthy Sick Children, by Dr. LeGrand Kerr, of Brooklyn; New Rules for the Treatment of Syphilis, illustrated by stereopticon slides, by Dr. William S. Gottheil, of Manhattan. A cordial invitation to the meeting is extended to all.

Meetings of Medical Societies to be Held in Philadelphia during the Coming Week.—Monday, April 7th: Wills Hospital Ophthalmic Society, Academy of Surgery, Philadelphia Clinical Association, Clinical Society of Jewish Hospital, Northwestern General Hospital Medical Society. Tuesday, April 8th: Pediatric Society. Wednesday, April 9th: County Medical Society. Thursday, April 10th: Polyclinic Ophthalmic Society and Pathological Society. Friday, April 11th: Northern Medical Association.

Alumni Society of the Medical Department of the University of Pennsylvania.—At the twenty-first annual meeting of this society, held recently in Philadelphia, three hundred members were present and voted $500 to found a scholarship in memory of Dr. Roland G. Curtin, the first president of the society, to be called the Roland G. Curtain Alumni Scholarship Fund. This sum will be increased each year. The following officers were elected: President, Dr. Clarence P. Franklin; honorary vice-president, Dr. Edgar Fahs Smith; first vice-president, Dr. Howard Sutton; second vice-president, Dr. William P. Robinson; third vice-president, Dr. Charles Claxton; corresponding secretary, Dr. B. Franklin Stahl; recording secretary, Dr. William S. Wray, and treasurer, Dr. Morris B. Miller.

Pellagra Commission to Continue Investigations.—Colonel Robert M. Thompson, of New York, and John H. McFadden, of Philadelphia, have agreed to supply the funds necessary for a continuation of the work of the pellagra commission in endeavoring to learn the cause of the disease and a remedy for its cure. The commission will leave New York very soon and take up its headquarters in Spartansburg, S. C., where its members worked last spring and summer. The personnel of the commission is the same as last year, comprising Captain Joseph F. Siler, medical corps, U. S. A.; Dr. Philip E. Garrison, passed assistant surgeon, U. S. N.; Dr. Ward J. MacNeal, assistant director, department of laboratories of the New York Post-Graduate Medical School and Hospital; and Allan H. Jennings and M. V. King, entomologists, of the bureau of entomology of the Department of Agriculture.

Medical Society of the Missouri Valley.—The twenty-fifth semiannual meeting of this society was held in Kansas City, Mo., on March 20th and 21st, with the second vice-president, Dr. B. T. Quigley, of Mound City, Mo., in the chair. There was a large attendance, and an excellent programme was presented, an interesting feature being a symposium on cancer, in which the importance of educating the laity in regard to early symptoms was emphasized. It was suggested that as a means to aid in this education campaign, every State medical society appoint a publicity committee, backed by the authority of the State society, to prepare proper articles for the daily press and the weekly papers in the country. Among those who participated in the discussion were Dr. Franklin H. Martin, of Chicago; Dr. Joseph C. Bloodgood, of Baltimore; Dr. W. L. Brosius, of Gallatin, Mo.; Dr. John F. Binnie, of Kansas City; Dr. Donald McCrea, of Council Bluffs, Iowa; and Dr. Henry S. Munro, of Omaha.

Occupational Diseases in Chemical Trades.—At the February meeting of the New York Section of the American Chemical Society a committee on Occupational Diseases in Chemical Trades was organized, with Dr. Charles Baskerville, professor of chemistry and director of the laboratory, College of the City of New York, as chairman. The objects of this committee may be briefly stated as follows:

"1. To hold itself ready to advise the legislatures of the States of New York and New Jersey in reference to matters pertaining to occupational diseases in the chemical trades;

"2. To study various bills presented in the legislatures in an effort to avoid unwise legislation; especially that which might be inoperative or ineffective from one or many reasons resulting from lack of technical knowledge at the time of writing the laws;

"3. To inaugurate and superintend such investigations as might be decided upon which look toward improvement of conditions of labor in the chemical trades."

At the last meeting of the committee, held on March 7th, it was decided to notify the proper committees of the legislatures of New York and New Jersey and also local municipal authorities of the organization of this committee, and to make public announcement of its objects, in order that manufacturers might learn of its existence and perhaps make use of its services in carrying on investigations of their own problems.

Smallpox in Washington.—In the District of Columbia, which for administrative purposes is identical with the city of Washington, there were notified between January 1 and March 24, 1913, 58 cases of smallpox. On March 26th, there were 18 cases still under treatment. The disease has been of the usual mild type and to the present no deaths due to it have been registered. Several cases have occurred among employees in the government departments with the result that extensive vaccination has been carried on among those in these departments. The infection has invaded the White House through an employee, and the President himself submitted to vaccination.

Improved Hospital Service in Havana.—It is reported that two new automobile ambulances will soon be put into public service in Havana, at a cost of $10,000, the necessary appropriation having been approved by the municipal council. Considerable fault is found with the present ambulance service of the city, the complaint being that doctors use the ambulances for private uses. The city medical services will also be reorganized. The council has resolved that the city should engage the services of twenty physicians to attend and give first aid, and ten other physicians to devote their time exclusively to the poor while a new plan of having charity inspectors visit the needy as it is done in other countries, is to be put in force. A new emergency hospital is being planned for Luyan's, a suburb of Havana.

An English Speaking Conference on the Prevention of Infant Mortality will be held in Caxton Hall, Westminster, London, on Monday morning, Monday afternoon, and Tuesday morning, August 4th and 5th. The meetings will be held under the auspices of the (British) National Association for the Prevention of Infant Mortality and The Welfare of Infancy under the Patronage of the King and Queen, and will convene immediately preceding the opening of the International Medical Congress. A tentative programme has been issued by the committee which indicates that the papers will consist largely of medical opinion. The subjects treated will concern the responsibility of central and local authorities in infant and child hygiene; the administrative control of the milk supply; the necessity for special education in infant hygiene; medical problems in infant nutrition; and antenatal hygiene. The president of the conference will be the Hon. John Burns, M. P., president for the Local Government Board. The chairman of the English Executive Committee is Sir Thomas Barlow and the secretary, Miss J. Halford, 4 Tavistock Square, London, W. C. The American committee, in charge of the part to be taken by the United States and Canada, will furnish information to those desiring to attend the conference. Dr. Henry L. Coit, chairman, 277 Mt. Prospect Avenue, Newark, N. J. Dr. Philip Van Ingen, secretary, 125 East 71st Street, New York.

Memorial to Lord Lister.—A committee was recently organized at the suggestion of the Royal Society and the Royal College of Surgeons for the purpose of raising funds for the establishment of a suitable memorial to commemorate the notable services of the late Lord Lister to the cause of science and the alleviation of human suffering. An executive committee has been appointed for the purpose of deciding what should be the form of the memorial, and of taking the necessary steps to organize the collection of subscriptions and to carry the design into execution. This committee has decided that the most suitable memorial would be one comprising: 1, A tablet with medallion and inscription in Westminster Abbey; 2, the erection of a monument in a public place in London; and, 3, the establishment of an International Lister Memorial Fund for the advancement of surgery, from which either grants in aid of researches bearing on surgery or awards in recognition of distinguished contributions to surgical science, should be made, irrespective of nationality. To carry out these proposals a large sum will be required. The sum already subscribed or promised is, perhaps, sufficient for the completion of the first two parts of the proposed memorial, but the third object is international in character and the funds in hand are as yet insufficient for its adequate establishment. An appeal is therefore made for assistance from other countries, in order that the provision of an International Lister Fund may be accomplished on a scale worthy of the illustrious man and of the debt under which the entire civilized world lies to him. Donations may be sent to the Treasurer of the Lister Memorial Fund, Royal Society, Burlington House, London, W.

Pith of Progressive Literature.

MEDIZINISCHE KLINIK.

February 2, 1913.

Death Following Momburg's (Exsanguination) Anemia and Lumbar Anesthesia.—C. Sternberg gives detailed post mortem findings in cases where death followed these procedures. Momburg's anemia when applied, with the prescribed precautions, when the indications are present and in carefully chosen cases, is a satisfactory process. The failures reported are due to faulty technic, indiscriminate application, especially in patients having heart lesions, nephritis, or intestinal affections. The post mortem findings in six cases where death was directly traceable to lumbar anesthesia are described, and the statistics prove that the number of deaths are relatively large compared with other modes of anesthesia.

Pressure-Relieving Procedures in Choked Disc.—R. Hessberg mentions five palliative operations in this connection, namely, lumbar puncture, ventricular puncture, trepanation, puncture of corpus callosum, and the permanent drainage of the ventricle after Paye and Henle, and discusses the indications and advantages of these different methods.

Atony and Gastroptosis.—Disqué defines at length atony and illustrates by various drawings the shape and position that the stomach may assume when this condition obtains. He describes the habitus of the patient, the therapy indicated, the diet, especially easily digestible fats and carbohydrates, the latter being the best proteid sparers and leaving the stomach most rapidly. Under general treatment are included two hours' rest after meals in the recumbent posture, light gymnastics, local physical treatment of the body, faradization, massage of the stomach and intestines, lavage, interdiction of corsets and their replacement by abdominal binders.

Appendicitis from Oxyurids.—Rheindorf finds: 1. In children having clinical symptoms of appendicitis a large percentage show oxyurids, while in adults these are found only occasionally. A systematic examination for these in the latter would be advantageous. 2. Careful microscopical examination shows changes in the appendicular processes of such persons. 3. These changes vary; large and small defects in the mucous membrane which reach deep in the wall and may lead to extensive destruction. They are caused by the worms. 4. These changes produce secondary inflammatory processes of either deep or superficial nature which, 5. threaten the health and life of the patient in many ways. 6. The oxyuriasis is a widespread evil the elimination of which is a necessity. 7. Enlightenment on the subject should begin in the schools and be continued in practice by the physician.

Treatment of Dysmenorrhea and Essential Hemorrhage from the Female Genital Organs.—Margoniner recommends liquor sedans a palatable remedy which consists of extract of viburnum prunifolium, hydrastin, etc. Thirty minims are given three times a day one week before menstruation, increasing in a few days to one half teaspoonful, while during menstruation one teaspoonful is given three times a day. The cases cited exhibited a markedly hemostyptic and anodyne effect. The author has also found it effective in severe menorrhagias with subsequent anemia and hemorrhages accompanying the climacteric.

February 9, 1913.

Calotropis procera.—L. Lewin relates that the African *Calotropis procera* secretes a milky juice which exerts a digitalislike effect on the hearts of cold and warm blooded animals beside other poisonous side effects. The active principle is contained in the serum of the milky juice and by evaporation is eventually found to be a brownish black mass called calotropin by the author, of which 0.33 mg. will kill a rabbit in six minutes, the heart stopping in systole. The remedy, which may be kept for years, is capable of internal and subcutaneous application.

Salinofer, a Salt Containing Skin Cream as a Substitute for Brinebaths.—Th. Rosenbaum recommends salinofer, an easily absorbable skin cream containing fifteen per cent. of sodium chloride for local treatment in rheumatic and neuralgic conditions. The preparation may be rubbed on the affected parts once or twice daily without producing irritation of the skin.

Permanent Drainage under the Skin without the Use of Drains.—Euler's principle of subcutaneous drainage, as first worked out for ascites, is to establish a connection between the secreting cavity and artificially formed fistulas with the subcutaneous skin tissues, the lymphatic vessels of which, will transmit the flow. The skin above the fistulas is closed by sutures. Spontaneous drainage of pleuritic exudates is successfully accomplished by the formation of an opening into the ribs. In hygromata and the flow from bursæ, after the opening of the sac, the inner displaced capsular parts are sewed to the outer parts by iodine catgut. All these minor operations are without danger to the patient and may be performed under local anesthesia in ambulant cases.

February 16, 1913.

Abortive Treatment of Gonorrhea.—L. Lilienthal and J. Cohn conclude: 1. Every gonorrhea the first subjective symptoms of which are not longer than of twenty-four hours' duration, where no complications exist, and only a slight seropurulent discharge is present, should receive the abortive treatment. 2. On three successive days three injections daily of eight c. c. of four to five per cent. protargol are given, each injection retained in the anterior urethra for four minutes. 3. About one half of the patients thus treated were free of all symptoms from the fourth day on, and a number of the cases treated as far back as 1905 remained free from all further manifestations. 4. Severe complications were not noted, even in cases not successfully treated. 5. In all of the cases there was a marked curtailing of the gonorrheal attack.

Gadiol, a New Codliver Oil Preparation.—Bruck considers gadiol to be a new and valuable preparation which is gladly taken and well borne, and therefore particularly well suited for cases of rhachitis and in forced feeding. Gadiol contains the oil in pure unchanged form and its digestibility is due to the addition of ethereal oils. These sub-

stances also prevent its disintegration, guarantee its permanence, and make possible its use in summer. A cool dark place is to be chosen for its keeping.

February 23, 1913.

Cleaning Out Placental Secundines.—Himmelheber advises "Hands off" in puerperal fever, whether a placental fragment has remained in the uterus or not. In a case of retention he urges the use of secale in large doses, preferably the simpler freshly prepared pulvis secalis cornuti, which acts much better, in his experience, than ergotin, secacornin, etc., which he has dispensed with entirely. Locally nothing should be done. Vaginal douches are worthless and uterine douches are dangerous.

Amidobenzol Dehydration in the Urine of Scarlet Fever and Scarlatinoid Eruptions.—O. Hesse avers that a positive reaction of the urobilinogen test may make the diagnosis of a doubtful case of scarlet fever certain and thus establish the differential diagnosis between the serum exanthemata and a series of other infectious diseases. A positive diagnosis solely on its presence should never be made. A negative reaction at the height of the eruption does occur, but is rare.

ZENTRALBLATT FÜR CHIRURGIE.

February 15, 1913.

Modification of Roux's Gastrojejunoesophagostomy.—O. Uffreduzzi and G. Giordano simplify this operation by first making an ordinary Y shaped anastomosis between the intestines outside of the chest and then between the stomach and the intestines at the point where they are already in contact. An incision is then made in the pleura in the sixth or seventh intercostal space, the esophagus is resected from the cardia to above the stricture, and the cardia is buried. A loop of small intestine is drawn up and joined to the esophagus, and an anastomosis is made between the loop and the stomach outside the chest as in the Roux operation.

Anesthesia of the Sciatic Nerve.—P. Babitski says that the sciatic nerve can be rendered anesthetic by an injection through the gluteal muscles, the needle being guided by the finger of the operator in the rectum of the patient, which which the sciatic nerve can be felt. The spine of the ischium is to be located with the finger as the guide to the nerve, as the latter passes from beneath the pyriform muscle just above it. Babitski has used this method successfully in fifteen cases. The anesthesia was complete in from two to five minutes, and operations from resection of the veins to amputation of the thigh could be performed.

PRESSE MÉDICALE.

February 26, 1913.

Nature of Neurasthenia.—J. Déjerine and E. Gauckler state that in studying 300 cases labelled "neurasthenia" they did not meet in a single instance the classic picture of this affection as originally described by Beard and Charcot. The only three features common to all neurasthenics are fatigue, abnormal susceptibility to fatigue, and depression. Yet a tuberculous patient presenting each of these three conditions would not be looked upon as a neurasthenic. The term neurasthenia is applied where these conditions cannot be accounted for. Upon inquiring closely into the initial disturbances preceding neurasthenia in their series of cases the authors found that in 103, or thirty-four per cent., there had been mental phenomena, such as attacks of melancholia, periods of depression in a confirmed periodic psychosis, or, more frequently, hypochondria or psychasthenia; in no case was abnormal suggestibility an original factor. In a second class, comprising 121, or forty per cent. of the patients, were those in whom there had been definite physical disorder, e. g., thyroid affections, malaria, mild tuberculous states, various intoxications, arteriosclerosis, as well as those suffering from simple debility or physical inadaptability, the cases arising merely from excessive strain, and finally, those in whom incipient organic disorders—hepatic cancer, movable kidney, gastric ulcer, or even periostitis and tuberculous abscess of the ensiform cartilage—cause pronounced "neurasthenic" states by reason of a neuropathic constitution of the individual. In the third remaining class of neurasthenics, comprising seventy-six, or twenty-five per cent. of the patients, the primary disturbance had been emotional; among these were cases of "mental inadaptability" to environment. Persistent emotional disturbance appears to the authors the sole effective cause of neurasthenia; in the first two classes of neurasthenics mentioned, the mental and physical disturbances present lead to the neurasthenic state through the emotional perturbation they engender, this, in turn, reacting on a neuropathic subsoil predisposing to neurasthenia.

SEMAINE MÉDICALE.

March 5, 1913.

Curettement in Febrile Abortion.—R. de Bovis questions the wisdom of Winter's recommendation not to evacuate the uterus in cases of abortion in which bacteriological examination shows the presence of hemolyzing streptococci. The recent reports of Warnekros and Schottmüller render it certain that the results obtained by curettement or other methods of emptying the uterus are not worse than those of noninterference; judging from the statistical data now at hand, in fact, they are distinctly better. The chief merit of Winter's views has been to emphasize the fact that hemolytic streptococci in abortion generally signify an unfavorable prognosis. Among this category occur most of the patients in whom infection has been generalized. In these curettement is useless, and it may even do harm. But even admitting this, curettement should not be denied to other patients in whom generalization has not occurred, exposed as they would then be to constant febrile disturbances, hemorrhages, and sapremia.

Hypodermic Injection of Quinine.—G. H. Lemoine discusses the various methods of injecting quinine that have been tried in order to avoid untoward local or general results. He concludes that the basic hydrochloride and the formate are the only salts that should be used for this purpose. Both should be employed in a twenty per cent. solution in distilled water; to render the hydrochloride sufficiently soluble, ethyl carbamate in the same percentage should be added. The solution of quinine formate must be gently heated before use,

as in the cold the salt is soluble only in the ratio of one to twenty. In 470 injections of the hydrochloride into the subcutaneous tissues or the muscles the author witnessed no untoward results. The best site for the injection is the upper gluteal region, more particularly any point along the inner third of a transverse line two fingerbreadths above the great trochanter. The injection must be made deeply, and the antiseptic precautions carefully taken. In giving an intramuscular injection a slight contraction of the muscle to be injected should first be elicited at the moment of introducing the needle; when the muscle relaxes the fluid is slowly injected. Previous heating of the ampoule or syringe tends to diminish pain; in fact, in most instances, there is no pain, and where it occurs it is slight and evanescent.

March 12, 1913.

New Technic for Neosalvarsan Injections.—P. Ravaut showed experimentally that solutions of neosalvarsan in normal saline solution soon became turbid, whereas solutions in distilled water did not. Sodium chloride having been thought by others to be responsible for some of the untoward effects of neosalvarsan, Ravaut discards it. Since lead, lime, and other substances which may be present in the distilled water used have also been considered harmful, Ravaut reduces the amount of water injected to a minimum—ten c. c. for 0.45 to 0.6 gramme doses of neosalvarsan, and fifteen c. c. for 0.75 to 0.9 gramme doses. These represent the minimal amounts that will not produce hemolysis, as the author showed experimentally. The injections are given with a twenty c. c. syringe and completed in fifteen or twenty seconds; on one occasion thirty-six patients were treated in two hours. Each of 184 injections administered in forty-seven patients were well borne; no venous induration followed, though some patients received six injections in the same vein. Fever, nausea, and vomiting seemed less frequent than where other procedures were followed, and the remedial results were the same.

REVUE MÉDICALE DE LA SUISSE ROMANDE.

February, 1913.

Congenital Partial Absence of Spinal Column and Cord, with Thoracoabdominopelvic Fissure.—P. Stauffer reports a case of this kind, and gives a complete anatomical description, with histological details. Labor occurred at term, but the fetus was macerated and had evidently been dead from three to four weeks. Both malformations could be accounted for by injury to the posterior extremity of the body of the embryo before the end of the third week, i. e., before the muscular plates had given rise to the membrana reuniens. The mother had fallen from a height of 1.5 metre in the third week of pregnancy.

Surgical Treatment of Hepatic Cirrhosis.—Juilliard discusses chiefly Talma's operation or omentopexy. Collected statistics show that while the percentage of operative deaths is steadily diminishing, the ratio of cures remains about the same, viz., one third. An additional one sixth of the cases shows improvement, so that about one half of all the patients operated upon are benefited. Cases of hypertrophic cirrhosis are more favorable than those of the atrophic variety. Cure results only some time after the operation in certain instances; thus in a case reported by Pal and Frank, the condition was arrested only eighteen months later. On the whole, the results of surgical treatment are fairly encouraging, considering the unfavorable prognosis of cirrhosis in general.

Sabrazès-Eckenstein Method in Diagnosis of Syphilis.—A. Perelmann points out that in pediatric practice the use of the Wassermann reaction is sometimes attended with difficulty owing to the fact that mothers object to the removal of the ten c. c. of blood required for this test. In the Sabrazès-Eckenstein procedure only 0.3 or 0.4 c. c. of serum, obtainable from three or four c. c. of blood, is necessary. The antigen used is an alcoholic extract of human heart tissue, heated to 60° C., then kept in the dark. It is titrated with syphilitic and nonsyphilitic sera and a five per cent. mixture of defibrinated sheep's blood with normal saline solution. In making the test blood is obtained by wet cupping, allowed to stand in the cup for a time, and the serum then withdrawn for use by means of a sterile pipette. Comparison of the results with those of the Wassermann in a series of thirty-one cases showed lack of concordance only in one instance. An attempt was made to reduce the amount of blood required still further by using only half quantities, but in one case this obscured the result. The general conclusion reached is that the Sabrazès-Eckenstein method may with advantage be substituted for the Wassermann, especially where the latter is impracticable. The test is simple and takes up only two and a half or three hours. The serum must be fresh, should be kept in contact with its clot, and must be hemolytic for sheep's red corpuscles.

ROUSSKY VRATCH

January 26, 1913.

A Case of Prolonged Cessation of Heart's Action Caused by Injury with a Needle.—N. I. Leporsky reports the case of a woman, twenty-six years old, who, in falling downstairs, had a sewing needle enter her chest. The clinical signs indicated that the needle entered the heart, a small end projecting under the skin. The removal of the needle was followed by shock, both respiration and heart's action stopping for twenty minutes. Two shorter attacks of a similar character followed within an hour. The woman recovered. The author attributes the condition to injury of the pericardium or the surface of the heart by the end of the needle during extraction.

February 2, 1913.

Dementia Præcox.—B. I. Vorotynsky discusses the character and nosology of dementia præcox, summarizing his discussion as follows: 1. The teaching of Kraepelin regarding early dementia and manic depressive psychosis aids but little in our progress in the field of clinical psychiatry. 2. Kraepelin's views on the etiology of dementia præcox do not stand criticism. In this connection, it is not proper to place this psychosis in Kraepelin's classification among diseases caused by disturbances of metabolism. The name of this psychosis, dementia præcox, is also wrong. 3. Clinical observations and recent investigations permit the conclusion that the so

called dementia præcox is a psychosis of a degenerative hereditary character determined by organic changes in the brain. In view of this it should be classified among the psychoses of degeneration and placed nearer the condition of mental deficiency. 4. Instead of dementia præcox it is more correct to name this psychoses *dementia primaria degenerativa*. 5. Primary degenerative dementia develops mostly between the ages of fifteen to twenty-five years; more rarely between twenty-five and thirty-five, and in only a very few cases over thirty-five. 6. The prognosis is absolutely unfavorable. Slight amelioration or temporary improvement may take place, but entire recovery is impossible. 7. Primary degenerative dementia generally begins slowly and gradually, often by a succession of nervous manifestations. The further progress is marked by explosions and jumps, the individual attacks lasting from two to three months and often ending in amelioration which the friends regard as complete recovery. There may be several such attacks in the course of two or three years. 8. The individual attacks of primary degenerative dementia often differ from each other and present a different clinical picture. Following the first maniacal outburst with a period of amelioration, the second attack may be ushered in with stupor, and this again may be followed by paranoiac or hebephrenic attacks. 9. Catatonia and dementia præcox paranoides should not be regarded as distinct clinical forms of the disease; they are merely variations of primary degenerative dementia, and from this standpoint may be considered as the catatonic, hebephrenic, and paranoiac forms of this psychosis. 10. Dementia primaria degenerativa often develops in connection with mental deficiency, and this often coincides with puberty. 11. The fact that several cases may occur in the same family is a proof that primary degenerative dementia has often a substratum of hereditary psychopathy. 12. The initial periods of primary degenerative dementia frequently occur in the form of manic depressive states, which explains the fact that this condition in the early stages is frequently diagnosticated as manic depressive psychosis. 13. The question of separating manic depressive psychosis into a distinct form of the disease is still open.

So Called Scarlatinal Spirochete.—I. A. Barannikoff calls attention to the inclusions in the neutrophiles in scarlet fever of spirochetelike bodies which he discovered and described in 1910. These inclusions occur invariably during the first week of the disease. When stained with azar or Unna's methylene blue they appear as clumps, or ringlike or snakelike formations within or on the protoplasm of the neutrophiles. The author has been able to establish a positive diagnosis of scarlet fever by finding these inclusions. Recently Döhle reported similar findings.

Transplantation of Living Tissue into Bone Cavities.—M. P. Lavrova reviews the literature on the subject and reports two cases of osteomyelitis in which the cavities in the bones were filled with adipose tissue removed from the buttocks, in one case, and the thigh in the other. The results were perfect.

Strangulation of Malignant Tumors. — L. A. Chachloff reports a new method of treating new growths by depriving the surrounding tissue of oxygen. This, he states, he accomplishes by injection of leucomethylene blue. This substance possesses a great avidity for oxygen and also readily penetrates the nucleus of the cells during life. He reports no clinical observations, but states that he has succeeded in producing loss of hair without injury to the underlying tissue. He has also produced local recoveries by injecting the substance into the blood supply of the given part. The ulcer which formed healed very readily.

BRITISH MEDICAL JOURNAL.

March 15, 1913.

Alimentary Toxemia.—W. Hale White says that if the poisons giving rise to the symptoms covered by this term are bacterial the amount of them produced will depend upon the number of microorganisms and the suitability of the medium for their growth, which might be so favorable that toxemia would result without stasis. Therefore, the presence of toxemia is not proof of stasis. Those who attach great importance to mechanical stasis differ as to its cause. Some attribute it to excessively large valves of Houston, some to pericolitis, dropping of the colon, adhesions around the ascending colon, spur formations at the hepatic and splenic flexures, abnormal mobility of the cecum, the development of various bands and abnormal mesenteries which drag upon the bowel and kink it; but the reasons given for thinking that these bands are evolutionary are not convincing. There is no sufficiently large number of cases proving that any of these conditions is more common in those supposed to be suffering from intestinal toxemia than in those who are not. It is strange that when the bowels are matted into one mass by chronic peritonitis, so that great interference to peristalsis must exist, the symptoms indicative of alimentary toxemia are not constantly present, and even intestinal obstruction is rare. Although it may be that some of these mechanical causes lead to alimentary toxemia, the matter cannot be regarded as proved, and it must be remembered that the coexistence of two phenomena does not prove that they stand in the relation of cause and effect. The symptoms and conditions which are ascribed to alimentary toxemia cover the widest possible range, from exophthalmic goitre and cystic disease of the breast to the most trivial, and there is grave danger that the term will become a cloak for ignorance just as gout, uric acid diathesis, etc., have been in the past.

Bacteriology of the Alimentary Canal.—F. W. Andrews sums up his observations in the following propositions: 1. In an important group of cases the poisoning is by foreign proteids as such, the defect lying in the liver, which ought to shield the body from their effects. With this bacteria have, as a rule, nothing to do. 2. The main effect of bacterial activity in the production of elementary toxemia lies in their ability to carry out protein cleavages beyond the capacity of the ordinary digestive ferments, with the formation of products which, when in excess, the body is unable to neutralize. 3. There is at present little evidence that true toxines, derived from the ordinary flora of the gut, soluble or intracellular, play much part in alimentary toxemia.

LANCET.

March 15, 1913.

Spastic Cyclophoria.—A. A. Bradburne calls attention to the fact that when astigmatism lies obliquely there is added to the ordinary blurring a distortion or obliquity of vertical or horizontal objects. Before such an object can be viewed correctly with both eyes it is necessary for the eyes to rotate around an anteroposterior axis to form a correct single mental impression. The effects produced by oblique astigmatism are greater, more exacting, and more profound than those produced by rectangularly placed errors. It is not uncommon to meet with old cases of neurasthenia of unassignable cause completely cured by the correction of a small degree of oblique astigmatism. The reason that a horizontal line will seem to lie obliquely is that the patient views it with eyes rotated in an attempt to correct the astigmatism, so that the patient ascribes the oblique direction to the line, while ignorant of the changed position of the eyes.

Treatment of Carbuncles, Boils, Staphylococcic Infections, and Certain Streptococcic Infections.—John and Russell J. Reynolds have used dilute sulphuric acid (B. P.) internally in doses of twenty to thirty minims, each dose diluted with two ounces of water as a remedy for these conditions. The doses are repeated every four hours. In the case of carbuncle large doses must be used and changes are observed in the following order: Within twenty-four hours the infiltrated area becomes strictly circumscribed; then the slough is observed to soften; during the next few days pus is freely discharged, and the whole affected area shrinks and healthy granulation tissue forms, filling up the cavity until the part is healed. The only external application is a dressing of carbolized petrolatum, one in twenty. In cases apparently of streptococcic infection a somewhat different, though favorable, course obtains; the high temperature is quickly reduced and the pain and swelling and malaise gradually subside, the patient progressing uninterruptedly toward convalescence. Where the lymphatics are inflamed and the glands enlarged and painful, these all subside in a few days. Similarly, recurrent crops of boils and pimples and severe cases of acne have yielded readily to this treatment. The treatment having proved so uniformly effectual in many similar classes of cases, the authors tried it in other conditions where pyogenic organisms were responsible for some of the symptoms. Cases of bronchiectasis and pulmonary tuberculosis, where there is often a staphylococcic infection, have been benefited. The remedy seems to have a wide sphere of usefulness.

Treatment of Pulmonary Tuberculosis.—Noel D. Bardswell compares the results, with regard to the disappearance of bacilli from the sputum, obtained in two series of cases treated similarly, save for the use of tuberculin in one and its absence from the other series. In cases in the first stage the use of tuberculin increases the chances of freeing the sputum from bacilli by 16.6 per cent. over the chances of the patients treated without tuberculin. Much the same is seen in the group in the second stage, where the chances are some seventeen per cent. better for those treated with tuberculin. As is to be expected, the use of tuberculin in the cases of the third stage has little or no influence on the clearing of the sputum.

Some Anatomical Considerations of the Disposition of the Sciatic Nerve and Femoral Artery.—Frederic Wood-Jones suggests that with the extension of the lower extremity of man the structures upon its anterior aspect become stretched and the femoral artery and nerves become kinked over the brim of the pelvis. The sciatic nerve has a right angled bend removed from its course at the hip joint, but this is compensated for by the extension at the knee. The sciatic nerve lies upon the pelvic bones at the prominent junction of the ilium and ischium, above and behind the acetabulum, and at this point the pressure may be increased by irregularities of the acetabular margin developed in osteoarthritis. The sexual differences in the pelvic bones make this normal bony prominence a far greater interruption in the course of the nerve in the male than in the female, for in the female, with the opening out of the sciatic notch, this point is carried forward and outward. It is not improbable that this sexual difference accounts for the greater frequency of this form of sciatica in men. Pressure or tension sciatica is the true counterpart of brachial neuritis from rib pressure.

JOURNAL OF TROPICAL MEDICINE AND HYGIENE.

February 1, 1913.

Etiology of Sprue.—Aldo Castellani and G. C. Low found fungi of the genus *Monilia* in the saliva or stools of all but one out of eight cases of sprue. All the species seen, however, had also been detected by the authors in the stools and occasionally in the mouths of normal individuals, as well as in patients suffering from various diseases, including typhoid fever. Rabbits and monkeys, given the fungi in moderate amount in their food, showed no definite symptoms, though agglutinins to a certain extent specific were formed in rabbits inoculated subcutaneously. The authors conclude that fungi are not the real cause of sprue, though they may constitute a secondary infection, especially in the last stages of the disease, and give rise to some of the symptoms, such as frothiness of the stools. It was found that when the patients were given large repeated doses of sodium bicarbonate the fungi decreased or disappeared, together with the frothy diarrhea and flatulence often complained of.

February 15, 1913.

Indian Oropharyngeal Leishmaniasis.—Aldo Castellani records the case of a European living in Ceylon who had ulcerations on the posterior wall of the pharynx and on the soft palate, of nine years' standing. Antisyphilitic treatment gave no relief and cauterization but little. Leishman bodies were found in the blood. Oriental sore and kala azar were excluded by the prolonged course of the affection and the absence of cutaneous lesions or marked general symptoms; neither were the ulcers frambesiform. The existence of an Indian or Asiatic type of oropharyngeal Leishmaniasis is therefore suggested.

Paramalta Fever.—P. W. Bassett-Smith reports from Hyères, in the Riviera, a case of irregular, undulant fever of two years' duration with

arthritic and neurotic symptoms and moderate wasting and anemia. All reactions for ordinary undulant fever were persistently absent, but when a culture of *Micrococcus paramelitensis* later became available for test purposes, a positive agglutination reaction with this organism was noted.

CANADIAN MEDICAL ASSOCIATION JOURNAL.

March, 1913.

Penalties of Late Diagnosis of Diseases of the Urinary Tract.—G. S. Gordon briefly considers various infections and diseases of the urinary tract and emphasizes the following points: 1. The importance of the brood of diseases which follow gonorrhea is not sufficiently recognized in their incipient stages; 2, in the urinary tract, as elsewhere in the body, it is important to know the chief microbe present in disease; 3, any obstruction to urination causes serious progressive damage; 4, blood or pus, whenever found in the urine, peremptorily calls for an explanation of its source.

BOSTON MEDICAL AND SURGICAL JOURNAL.

March 20, 1913.

Seasonal Variation of the Symptomatology of Pulmonary Tuberculosis.—N. B. Burns says that phthisical patients are apt to lose rapidly in weight and general condition in May, June, and the first two weeks of July, which season constitutes an unfavorable and critical period. They make an extraordinary recovery in weight and general condition in the month of August, which is a surprisingly favorable time of the year. August, September, January, and February are the most propitious months for obtaining successful results in treating pulmonary tuberculosis. Forced feeding in the unfavorable season seems to have availed very little.

Facts, Ideas, and Theories Relating to Success in Treatment of Joint Diseases; Visceral Ptosis and Arthritis; Mild Intestinal Toxemias and Gout.—H. W. Marshall concludes in this number his very long paper giving the results of his study of arthritic cases met with in actual practice, and his consideration of the various methods of treatment, good and bad, that had been tried upon these patients. Some of the points made are: Anatomical and physiological data are often confounded by clinicians, presumably because both are encountered always in every situation, but it should be kept clearly in mind that they are not identical, that structural and functional peculiarities of living tissues each are independent variable quantities. Variations, anatomical and physiological, are common in living tissues and not infrequently of marked degree: a fact frequently ignored or minimized, with the result that erroneous assumptions of constant or average values for variable factors lead to inaccurate conceptions and failures in treatment. Substances that are harmless ordinarily and constantly present in the circulation have their complete significance ignored or minimized because they are so familiar. Variations in amounts of comparatively harmless circulating waste products, like urates and certain metabolic products from intestinal bacterial activity, probably give rise to pathological changes in various tissues. Etiological obscurities at times are caused by combinations between two or more exceptional variations in well known conditions. Any single factor may have either large or small values independently without upsetting normal healthy relations, provided other factors vary in the same proportion and in the same direction. On the other hand, when variations among related factors occur simultaneously in opposite directions, and lead to deviations in the blood from normal healthy proportions, then pathological changes make their appearance as soon as tissue resistances are overcome. Comparatively slight variations combined in this way can produce pathological appearances in some instances. Therapeutic measures should be controlled by thorough knowledge of physiology, physiological chemistry, bacteriology, cellular biology, and anatomy, all of which may be included under the term biology. With a biological conception of each patient it is possible to estimate the defects present among the many factors that regulate the patient's health, and the only reliable way to increase efficiency of treatment is to become familiar with general biological conceptions. Pronounced lack of precise knowledge is the most serious obstacle to progress that is seen commonly among practising physicians, and the paramount importance of this defect has been forced upon the writer by his personal experience.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

March 22, 1913.

Opportunities for the Preservation of Hearing.—W. Sohier Bryant includes under this head systematic aural inspection for the detection of objective signs of the impairment of hearing, and the adaptation of the operative technic to include the preservation of the hearing. The former would apply to all ear diseases and defects not congenital, among them those originating in the pharynx, the nose, the Eustachian tube, external canal, the ear complications of general diseases, nervous conditions, and trauma. As to the operative technic, clinical experience has shown the writer that in mastoid operations hearing can be both preserved and improved by the exercise of more care and attention to detail. In acute aural infections, operative interference should not only restore the original activity, but in certain cases should even raise the hearing to a more efficient level. Mastoid operations demand early and careful operation and rapid convalescence. Lesions of the labyrinth capsule through endotympanic interventions, and especially by the radical operation, may easily cause suppuration of the labyrinth, and in such cases meningitis is imminent and can be averted only by a timely labyrinth operation. Rapid convalescence is assured by removing all diseased tissue, operating as aseptically as possible, and by having no devitalized parts, such as shreds of connective tissue or detritus (bone chips or threads of gauze) in the wound. In purulent middle ear inflammation there is little excuse to delay operation after incision of the membrane, if the purulent discharge persists for four or five days in conjunction with a solid mastoid as shown by a skiagram. The hearing is preserved by an early operation.

Influence of Gastroenterostomy on Gastric and Duodenal Ulcers.—A. A. Berg emphasizes

the point that simple gastroenterostomy can influence pyloric or duodenal ulcer only when pyloric spasm is present, otherwise all the food passes through the patent pylorus, even though a gastroenterostomy is present and the ulcerated area is not therefore protected from trauma. After a gastroenterostomy the reflux of duodenal contents into the stomach is natural and serves to neutralize the excessive acidity, but this reflux does not hasten the healing of the ulcer. Recurrence of the ulcer will not be prevented by a gostroenterostomy. Excluding the question of malignant degeneration of a healed or healing ulcer, excision of an ulcer has no particular merit over a gastroenterostomy toward preventing recurrence or recrudescence. Pylorectomy protects against recurrence, but is attended by a higher mortality. Gastroenterostomy with pyloric exclusion favors the healing of the ulcer and has equal value in preventing recurrence as has pylorectomy, beside the great advantage of a very low mortality.

Pellagra; Pathology of Gastrointestinal Tract.—H. P. Mills prepared microscopic sections from different portions of the gastrointestinal tract of pellagrous patients, so that the findings would fairly represent the conditions present. The lesions found were those of a chronic catarrhal inflammation, but in some areas the condition was that of an acute process and closely resembled the description given by Coplin of hemorrhagic inflammation of mucous membranes. These findings would seem to support the theory that toxic products cause pellagra, whether taken with food products or of endogenous origin.

Perineorrhaphy with the Figure of Eight Suture.—Charles G. Child, Jr., has devised an operation for the repair of the perineum, in which the vaginal sutures are passed and tied in the usual manner. In the perineum a figure of eight suture is used, the first bight of which catches up the levator ani muscles, and the second bight the transverse perineal muscles and skin. In tying the sutures, care should be taken not to bring them too tightly together, to avoid cutting into the tissues and to facilitate removal. The tissues included are to be snugly approximated—no more. The writer asserts for this operation a high percentage of primary union, perfect approximation, and obliteration of all "dead" space. Fewer sutures insure less interference with the nutrition of the tissues. There are, moreover, no buried sutures of uncertain strength and doubtful sterility, with low power of resistance to infection and an uncertain period of absorbability, but removable sutures unquestionably strong, nonabsorbable, noninfectible, and absolutely sterilizable.

MEDICAL RECORD.

March 22, 1913.

Relative Value of Living or Dead Tubercle Bacilli and of their Endotoxines in Solution in Active Immunization against Tuberculosis.—Karl von Ruck believes that all students of immunity in tuberculosis agree with him, that in the light of present evidence there is no apparent advantage to be expected from the antigen for which Friedmann has made his remarkable therapeutic assertions. The writer believes also that a vaccine consisting of the extractives of tubercle bacilli in suitable combination and proportions, representing all the endotoxines essential for active immunization, is ample and sufficient. He has supplied good evidence as to its prophylactic and curative qualities, and he fails to see how it could be augmented or made more conclusive. This evidence appears in the following summary: "After the administration of a single full dose of the vaccine all the specific antibodies, including the several amboceptors, can be demonstrated in the blood serum of every case, with the whole and with all partial antigens, after the fourth or fifth day, and these antibodies suffer no quantitative diminution for periods up to twenty months. Under proper coincidence of complement fixation with the several partial antigens, such sera have a maximum bacteriolytic power *in vitro* sufficient to cause complete disintegration of the bodies of virulent tubercle bacilli to a state of granules and free fats, and *in vivo* to cause their complete destruction to a degree that after twelve to twenty-four hours no bacillary residue is demonstrable under any method of staining. The sera completely destroy all virulence of the bacillary residue in the tubes used for bacteriolytic tests *in vitro,* and properly immunized animals withstand the test *in vivo*, as do also normal animals when a proper amount of the immune serum is injected at the time when the injection is made with virulent tubercle bacilli or when the latter have been exposed to its action. Animals can also be immunized to a like degree, their sera showing the same bacteriolytic and germicidal action *in vitro* and *in vivo*, and the immunized animals resist completely a virulent infection, quantitatively many times greater than is necessary to invariably kill the control animals. In over 150 cases representing the early stage of pulmonary tuberculosis, a single full dose was invariably followed by what may be termed a clinical cure."

Treatment of Lime Starvation.—John F. Russell presents the practical suggestion that to insure the absorption of lime in an assimilable form, in these cases, we must supply lime phosphate, casein, and dilute hydrochloric acid together. No one alone is sufficient. They must all be present in the stomach at the same time. Milk and eggs to which diluted hydrochloric acid has been added, also fulfill this requirement.

Further Experience with the High Calory Diet in Typhoid Fever.—Montgomery H. Sicard is an earnest advocate of Coleman's high calory diet in typhoid fever, and his experience proves that its use is accompanied with great advantages to the patients. They have a cleaner, moister tongue, more comfortable mouth, less offensive breath, less emaciation (some show a positive gain in weight), less nervous exhaustion, which was manifested by continuous muttering and constant picking at the bedclothes, a cleaner, healthier skin, greater comfort, less diarrhea, probably lessened mortality, and fewer complications. Maintenance of weight and nutrition, the amelioration of hunger, and the lessened tedium of convalescence are marked features of high calory feeding in typhoid fever.

Medical Treatment of Appendicitis.—Beverley Robinson enters an earnest plea for great conservatism, as opposed to the prevailing, and, in his be-

lief, erroneous judgment of frequent operation almost as soon as the diagnosis is made. The writer promulgates certain rules of treatment, judicious and safe, especially for all travelers in localities lacking experienced surgeons and modern hospital facilities. The essential features are dorsal decubitus, liquid food, enemas of warm water, egg yolk, and sweet oil, warm flannels wrung out of alcohol and water and applied to the belly, covered with rubber tissue, and renewed when dry. Codeine tablets (one tenth grain) are given every two hours until pain is notably less, then less frequently. Transport from the bed or sitting up is forbidden so long as the belly pain continues, even if there is little or no fever. Cracked ice and the best brandy (a teaspoonful frequently) will relieve nausea or weakness. Strong broths or milk, alternately or mixed together (one or more ounces every two hours) should supply nutrition when prostration is present and will preserve life for many days. Operation is absolutely forbidden during the acute period, unless a good surgeon is available and the conditions for operation are favorable. A "cure" will follow in a few days, in most cases. Later on, in the interval or quiescent period, operation may be indicated, the patient being apparently well, and may then be done at home or in a properly equipped modern hospital.

AMERICAN MEDICINE.

February, 1913.

Operations upon the Rectum under Local Anesthesia.—J. F. Saphir reports twelve cases of rectal disease operated in under local anesthesia, one under ethyl chloride spray, two under cocaine hydrochloride solution, two under beta eucaine solution, three under sterile water solution, and four under quinine and urea hydrochloride solution. Ethyl chloride spray is useful in thrombotic hemorrhoids when outside the sphincter muscle, in opening abscesses or furuncles on the buttocks or about the anus; it is contraindicated in all conditions within the rectum or above the anal or sphincteric margin. Beta eucaine solution (one tenth per cent. to one eighth per cent.) is useful in all rectal conditions, and although less toxic than cocaine, it may produce toxic effects within five or ten minutes after the operation. Cocaine solution (one tenth per cent. to one eighth per cent., never stronger) produces toxic symptoms more frequently and sooner when used about the rectum than when used elsewhere. While there is no pain during injection of solutions of cocaine or beta eucaine, or during operation, five or ten minutes after operation there may be excruciating pain, weakness, and faintness attended with a cold sweat; when using either, morphine (one fourth grain) in suppository or by hypodermic should be used, the former before, the latter after operation. Sterile water solution produces some distention pain during infiltration, but no pain during or after operation, and is preferred in mucous membrane work, but not in skin work. Quinine and urea hydrochloride solution is the writer's choice (one per cent. solution in mucous membrane work, where sloughing followed by scar tissue is desired, and one fourth per cent. to one third per cent. for use in skin work), as anesthesia is induced in from three to twenty minutes and lasts for from three to ten days.

INTERSTATE MEDICAL JOURNAL.

February, 1913.

Diagnosis of Gallstones.—Henry L. Elsner makes the point that it is for the good of the patient and of the profession that there be concerted action of the physician and surgeon. The writer is satisfied from his past experiences that the surgeon will always require the physician's knowledge of pathology and diagnosis, and possibly some of his conservatism to guide him. Together they will break loose from the extreme views of each to meet on common ground where deliberate judgment and reasoning will prevail.

Dementia præcox.—Bernard Oettinger gives an excellent clinical picture of this malady, especially in presenting details designed to depict the early symptoms—hypochondriacal, neurasthenic, hysterical, and such slight mental changes, intellectual and ethical, that together comprise the first stage of a serious disorder. Advised by the general practitioner, prophylaxis of the greatest value to the patient and his environment may be instituted, for care in a proper hospital would guard against these impulsive attempts at self destruction which are frequently the first intimation that a serious condition exists; would prevent criminal acts directed against person and property, such as arson and criminal assault; would lead to protective segregation of social delinquents with all that this means to society. On the other hand, proper institutional régime for these unfortunates not only conserves the intellectual residue, but yields a certain amount of happiness to those who retain some mental capacity by giving them suitable work and removing the stress of competition for a livelihood.

Principles of the Technic of Skin Grafting.—Arthur E. Hertzler says the preparation of the surface to be grafted should be done with a knife and not with a curette. Dry gauze should be used with pressure to control bleeding from the prepared surface, heat and moisture being avoided. Transfer of the grafts should be made without the use of moisture of any kind. When the ideal conditions for the graft are obtained, the dressing and aftercare are of minor importance. The writer covers the engrafted area with strips of gauze smeared with petrolatum, changing them after five to seven days. Daylight is the ideal dressing after this.

Poison Oak Experiments.—Edward von Adelung has employed the control experimental method which consists of applying the chosen therapeutic agent to a selected area of affected skin, employing other areas for controls. These areas should, if possible, be symmetrical. He showed that in every case the dermatitis was limited to the exact area of the applied poison and was not distributed by the body fluids. By another experiment he proved that the serous discharge from rhus dermatitis is innocuous. As to poisoning by smoke from burning poison oak leaves, he concludes that the smoke can readily carry incompletely burned particles, thus remaining toxic. An-

other experiment proved that the poison was non-volatile. In the therapeutic tests, potassium permanganate, in hot solutions, alone was found curative, acting probably by uniting chemically with the toxine. Other remedies (peroxide of hydrogen, ammonia, sodium hyposulphite, etc.) tested by control methods gave negative results.

Advantages of the Noguchi Technic in the Diagnosis of Syphilis.—Florence W. Miller describes the chief advantages. The specimen of blood to be tested, one tenth the amount necessary in the Wassermann reaction, is taken from the finger, and not from a vein. Antigen made from normal beef heart, syphilitic fetus, or liver employed in the Wassermann test, is not always to be obtained. The amboceptor may be preserved on paper for an indefinite time, the Wassermann test requiring a more or less constant supply of rabbits for a satisfactory liquid amboceptor, which frequently deteriorates within several months. Less complement is required for the same amount of guineapig serum (two and one half times the number of tests may be made in the Noguchi technic). The red blood corpuscle suspension can be taken from the finger of the operator or from any other person, being more practical and economical than the keeping of sheep for that purpose. As for the Noguchi serum diagnosis of syphilis being too delicate, the main argument in its defense is that in this method one works with absolutely known quantities whose units have been formally standardized and which remain fixed.

JOURNAL OF NERVOUS AND MENTAL DISEASE.

January, 1913.

Localized Encephalitis of Left Motor Cortical Region with Epilepsia continua. — Sigmund Krummholz presents a detailed clinical and pathological report of a case of continuous localized convulsions lasting for twenty days and ending with the death of the patient. After three days of prodromal headache and irritability, clonic contractions appeared in the right hand and later invaded the right leg and face. Only one generalized convulsion occurred. The contractions were lightning-like in character and persisted day and night. The temperature was almost normal throughout the illness. Aphasic disturbances, intermittent delirium, torpor, and stupor were the principal mental symptoms. There was motor weakness in the right arm and leg, tendon reflexes were diminished, abdominal reflexes absent, and Babinski's sign was positive on the right side. Lumbar puncture revealed the pressure of the spinal fluid to be between 130 and 180 mm. water, liquor clear, globulin negative, Fehling's positive, and very few round cells present. At necropsy the brain was found to be edematous, the lower two thirds of the left precentral convolution was firmer than normal, and the adjacent parietal region, on section, presented evidences of punctate hemorrhages. Microscopically the findings consisted of general hyperemia, small hemorrhages, and gliosis of varying degrees. The author concludes that, although the history of the case reveals no etiological factor for the disease, the pathological anatomy bears the finger marks of a toxic agent: the acute cerebral changes are characteristic of encephalitis hemorrhagica; and it is probable that the vehement gliomatous proliferation of the left motor cortical region was an essential factor in the production of the convulsions.

February, 1913.

Examination of Ductless Glands in Dementia præcox.—F. X. Dercum and A. G. Ellis, holding the view that dementia præcox is associated with a state of autointoxication, have been prompted to study pathologically eight cases of this disease with special reference to the glands of internal secretion. All the patients died of tuberculosis, an interesting point in the pathology of dementia præcox, but complicating the interpretation of the pathological findings. One of the most striking points noted was the underweight of the thyroid gland in seven of the eight cases discussed. The adrenals also presented notable variations from the normal in weight and in size; the small amount of fat in the cortical cells of the adrenals was a constant feature, probably indicating diminished functional activity. The condition of the other organs can probably be attributed to tuberculosis. In conclusion, the authors consider that "it is a remarkable fact that the almost universal cause of death in dementia præcox is tuberculosis, and if the feebleness to resistance to the tubercle bacillus is due to a fault of the adrenal system (pituitary, thyroid, and adrenals) we have reason to infer that it is one of the factors in the make up of dementia præcox. The conclusion is not justified that an abnormality of the adrenal system is the cause of the mental symptoms, but our findings are at least in keeping with the inference that anomalies of the ductless glands exist in dementia præcox."

Segmental Distribution of Spinal Root Nucleus of the Trigeminal Nerve.—Andrew H. Woods believes that the arrangement of the spinal root of the trigeminal nerve, representing the sensations of pain and temperature for the face, is segmental, analogous to that of the spinal cord, and bears no relationship to the peripheral branches of the nerve. This view is supported by the correlated clinical and pathological observations of two cases of syringomyelia which he records. His conclusions are as follows: 1. It is probable that touch and pressure sensations are conducted to the Gasserian ganglion, pass to new axones, enter the sensory root, and go directly into the chief trigeminal nucleus. Thence new axones conduct them to higher levels, across the rhaphe, and into the lemniscus. 2. Pain and temperature sensations pass from the ganglion and go through the sensory root down within the "spinal" root to the nucleus of that root. Thence new axones pass cephalad within the formatio reticularis, decussate, and finally reach the lemniscus. 3. The two cases here presented suggest that the facial area connected with the caudad point of the spinal root nucleus is a band lying along a line (from the vertex, in front of the ear to the angle of the mandible), and that each higher level of the nucleus is connected with a band of skin roughly concentric with the first, but nearer the mouth. Finally, a zone of skin around the mouth and nostrils is connected with the cephalad end of the nucleus. The fibres extending from any skin zone to the corresponding point in the nucleus may

pass through all three peripheral branches of the nerve.

New Esthesiometer.—Siegmund Auerbach describes a perfected form of pocket esthesiometer which offers the possibility of testing all of the qualities of cutaneous sensation with the exception of compass points and electrocutaneous sensibility. Tactile and pain sensations are tested by a small camel hair brush and a needle respectively; pressure sense by a graduated spring; heat and cold are tested by two hollow metallic cylinders connected by a solid hard rubber cylinder serving as a handle. The recrystallizing properties of sodium acetate after being melted are utilized to maintain heat in one end of the instrument, while the other end is kept at a low temperature by filling it with crystals of ammonium nitrate and water.

Proceedings of Societies.

SOUTHERN MEDICAL ASSOCIATION.

Sixth Annual Meeting, Held at Jacksonville, Fla., November 12, 13, and 14, 1912.

The President, Dr. J. M. Jackson, of Miami, Florida, in the Chair.

(*Concluded from page 684.*)

Effect of Antisyphilitic Remedies on the Wassermann Reaction.—Dr. William Litterer, of Nashville, drew the following conclusions: 1. From the serological point of view, injections of the biniodide of mercury gave better results, while the protiodide pills were the least satisfactory. 2. Apparently there was no very great difference serologically between the administration of salvarsan intravenously or intramuscularly in treating secondary syphilis. 3. Neosalvarsan appeared to be more efficacious than salvarsan. 4. In the primary stage of lues, especially before the appearance of a positive Wassermann and chancre excised, repeated intravenous injections of salvarsan or neosalvarsan gave promise of aborting the disease in quite a number of cases. 5. Serologically a combination of mercury and salvarsan appeared to have a distinct advantage over the administration of either of the drugs. 6. The Wassermann test as a therapeutic guide in the treatment of syphilis was paramount if one wished to carry it to a successful termination; in fact, it was the only method available of controlling the external manifestations of the disease.

Syphilis of the Eye.—Dr. Dunbar Roy, of Atlanta, said the longer he practised ophthalmology and the more extensive became his experience, the more he realized the importance of considering syphilis as the most important factor in connection with ocular diseases. Diffused interstitial keratitis was exceedingly rare in the acquired forms of syphilis, and yet a number of cases had been reported. Iritis in various forms was by no means infrequent during the secondary stage of syphilis, less frequent during the so called tertiary stages. Paralysis of the various muscles of the eye was frequently caused by syphilis. Ophthalmoplegia interna or paralysis of the sphincter of the pupil, usually unilateral, was by no means an infrequent form of syphilis. According to Alexander, three fourths of such cases were due to syphilis, while according to Uhthoff, only one fourth. Disease of the eye due to congenital syphilis frequently showed many of the symptoms which were seen in the acquired variety. Usually those cases of the congenital variety were comparatively mild because the severe ones ended fatally either in utero or soon after birth.

Syphilis of the Nose and Throat.—Dr. H. H. Martin, of Savannah, said the secondary lesions occurring in the nose and throat were interesting and sometimes troublesome, but were usually selflimited and seldom caused serious or permanent damage. They were of considerable diagnostic value and furnished fairly accurate indications of the progress or arrest of the disease. The tertiary lesions, on the contrary, played havoc with the bones, cartilages, mucous membranes, and fibrous tissues of the nose and throat, and since they often made their appearance some years after all active symptoms of the disease had disappeared, we must be constantly on our guard against them. In the nose a tertiary lesion might exhibit merely the symptoms of a bad cold, but the secretions very rapidly became purulent and offensive, and a careful inspection would reveal the lesion in the form of a more or less diffuse infiltration, or in a periosteal or perichondral abscess.

The treatment of syphilis of the nose and throat was essentially constitutional, but there were some local measures which had proved valuable in his hands, and among them the mixture of calomel and lime water, known as black wash. This could be used as a douche, a spray, or a gargle, and was essentially valuable in the specific coryza of the newborn, in ulceration, and in necrosis. The tincture of iodine was very useful in treating ulcerations when they were accessible. The secondary lesions required no local treatment and were best left alone.

Chronic Nasal Diphtheria.—Dr. Clifton M. Miller, of Richmond, reported three cases of nasal diphtheria. In one case the nasal discharge was bloodstained with a blood crust around the margin of the nares. The third case differed from the others in that the diphtheritic condition in the nose was chronic and lasted about six weeks, during which time the child had several attacks of follicular tonsilitis, which, in his opinion, were due to the mouth breathing and lowered resistance. Bacteriological examination of the throat during one of the attacks showed the absence of the bacillus of diphtheria which was present in the nasal discharge. The diagnosis in all of these cases was confirmed by bacteriological examination. All of them occurred in private practice. The circumstances surrounding the patients were good.

Treatment of Chronic Laryngeal Stenosis.—Dr. Homer Dupuy, of New Orleans, after giving a description of some specially devised intubation tubes, drew the following conclusions: 1. When a laryngeal stenosis was the result of hyperplastic changes, some form of dilatation was the most logical method of overcoming it. 2. Gradual, systematic dilatation by intubation offered very favorable prospects of success. 3. The tube with a low retaining swell and a wide head seemed to meet a want in the treatment of this form of stenosis. 4. In children, hypertrophic laryngitis was largely responsible for a chronic laryngeal stenosis. 5. In this particular affection tracheotomy was more apt to induce connective tissue changes than to effect a final cure.

Surgical Importance of the Breast.—Dr. E. Denegre Martin, of new Orleans, said that if one tenth of the time and labor expended in the elaborate operations devised for the cure of cancer had been devoted to its prevention, more women would be alive to-day to sing their praises. An important duty was the instruction of patients as to the care of the breasts. The expectant mother or nursing women should be taught how to care for the nipples, for infection through a fissured nipple would not only lead to abscess and sometimes to complete destruction of the gland, but would leave scars to light up at some future time into inoperable carcinomata. In an experience of more than 150 cases of cancer of the breast in which he had operated, three fourths being in colored women, the latter already malignant when operated upon, he was not able to-day to point out more than four of these who had lived over a period of six years, and only twelve whites. Here the percentage was larger because they were seen earlier. Every week he turned away from his clinic cases too far advanced for even temporary relief. The surgeon who picked his cases would of necessity get the best results, but the benefit should always be given to the patient, even if it meant but a short prolongation of life. The mortality from operations was less than two per cent. and his with fifty per cent. in advanced cases was less than one per cent. These statistics were improving daily, so far as cures were concerned. Still, the prevalence of cancer was on the increase, and we could and must reduce it.

Tubal or Extrauterine Gestation.—Dr. J. Hugh Carter, of Memphis, said we should operate in all cases as soon as possible, as we never knew when hemorrhage was

going to take place, even after it had seemingly been stopped. The six cases he had seen, four of which were his own, operated in by himself, two being of about six weeks' duration, and the other two about four and one half months, all ended in recovery. The other two he saw while an interne at the City Hospital. One occurred at full term, the operation being done during shock. The patient died in a short time. The other one, about two months, recovered after a long convalescence from subsequent infection.

As to what operations should be done, he did not believe one could say until the abdomen had been opened. Then the operator should do whatever he thought best. Each patient and the conditions found in the abdomen must be dealt with individually. He would insist upon a careful diagnosis of each case of suspected tubal gestation as early as possible, thereby giving the patient a much better chance for her life.

Clinical Value of the Tuberculins in the Diagnosis and Treatment of Tuberculosis.—Dr. WALLACE J. DUREL, of New Orleans, said in his personal observation of several hundred cases, it was evident that of eighty cases which were treated previously to 1909, of all those discharged as apparently well, and who were given the tuberculin test, the test proving negative, not one relapsed, yet many of the cases showed a distinct positive reaction upon their discharge and afterward relapsed, and three died since. This evidence convinced him that repeated tuberculin tests would show whether treated and supposedly cured cases were free from any tuberculous focus, active or latent, regardless of its size or location, and that the negative reaction meant more than a mere toximmunity in such cases.

The clinical therapeutic value of the tuberculins was exemplified in the tabulated records of eighty cases of tuberculosis treated in Louisiana previous to 1909. In this report, in the first stage, thirteen cases were treated, with recovery of all, and no relapse until 1912. In the second stage, sixteen cases were treated, with recovery in ten, and arrested in one. In the third stage, thirty cases were treated, fourteen apparently well, and sixteen arrested. In 1912, one of the apparently well cases had relapsed, and one ended fatally. Of the arrested cases, three relapsed and two were fatal. Of the third stage, twenty-one cases were treated; not one got well, nine were arrested, ten were improved, and two nonimproved. In 1912, sixteen of the twenty-one cases had terminated unfavorably. These figures taught the practical lesson that the early diagnosticated cases of tuberculosis could be treated with far better and more lasting results than the advanced cases.

Surgical Complications in the Abdomen during Typhoid Fever.—Dr. CHARLES M. REMSEN, of Atlanta, said that if they would put typhoid on a true pathological and surgical basis, view it from this standpoint, and look upon it as a potential abdominal calamity, and if they would familiarize themselves with the signs and symptoms of the normal typhoid abdomen and with each separate case, and if they would realize that with speedy operation under proper conditions that there need be little fear for the safety of their patient, and if they would make as their criterion for operation the absence of a certainty that perforation did not exist, rather than a certainty that it did exist, and if they would realize the fatal issue that was involved in delay, it was not possible, but certain, that many cases of typhoid dying from perforation, entirely unrecognized, would be reduced to a minimum, and the cases of recognized perforation would enter more and more into their true surgical sphere and be eliminated from the known causes of death in typhoid fever.

Early Tuberculosis with Especial Reference to Its Confusion with Malaria.—Dr. WILLIAM REDIN KIRK, of Hendersonville, North Carolina, said that without attempting to go into physical diagnosis in detail, he would like to call attention to a few points in connection with the recognition of tuberculosis in its early stage. Altered breath sounds were the rule, and not the exception in early cases. Lessened motion of the diaphragm was an early sign which William had demonstrated by the fluoroscope. It was also observed by Litten, whose shadow test was familiar; and Kronig had called attention to the fact that the motion of the lower border of the lung was diminished when the lung was involved to a small degree, while Pottinger asserted that the entire side lagged even in slight involvement of the apex. Exploration of the entire chest was always necessary, but especial care should be used in observing certain areas, the apices, front and back, the first intercostal spaces, the area under the scapula, which was partly uncovered when the hand was placed on the opposite shoulder, the area on each side of the vertebra between the scapula and the lower border of the lungs.

Rist, in a recent paper, had averred that the lower lobe was almost invariably the site of the initial lesion in children, and that the apex was involved secondarily in both children and adults, explaining that cough forced infectious material into the apex. Of the accessory means of diagnosis, he should say that search for the bacillus should be thorough, and negative cases examined repeatedly, for while finding the bacillus was the only absolute proof, a negative result was not positive evidence of the nonexistence of tuberculosis. Too often patients were assured they had tuberculosis upon this evidence alone. The general practitioner was not expected to make use of Arneth's method of differentiation of the nuclei of the neutrophiles, the opsonic index, and other more difficult laboratory means of diagnosis, but in all suspected cases he could and should use some of the tuberculin tests, Moro's, von Pirquet's, or the old method of the subcutaneous injection of Koch's old tuberculin.

Diagnosis of Plague.—Dr. R. L. WILSON, of Charleston, said that in plague work, great care should be taken in handling infected animals, tissue, cultures, and other material. Even persons accustomed to bacteriological laboratory work had to be reminded of danger as several laboratory cases of infection were on record. The principal things to look out for were fleas from animals, skin abrasions, soiling of fingers, use of pipettes, and smoking. To summarize, the principal points in diagnosis were: 1. Typical lesions especially characteristic buboes. 2. Production of the disease in animals by inoculation. 3. The unmistakable presence of the plague bacillus in smears, cultures, and inoculated animals.

Symptoms and Clinical Diagnosis of Bubonic Plague.—Dr. J. BIRNEY GUTHRIE, of New Orleans, stated that the appearance of the patient sick with bubonic plague was somewhat similar to that of one under the influence of alcohol. The face was swollen; the eyes were injected. There was a general loss of coordination, staggering gait, thick and stammering speech. This speech disturbance frequently extended into convalescence, and with persistence of lymphatic enlargement and recent scars of suppurating buboes, might furnish the clew to identification of a previously unreported case. The recognition of cases of bubonic plague, where it was known to exist, presented small difficulty to the physician. It was the identification of the first cases, especially if they were of mild type which would present the severe problem in diagnosis. In a suspicious case careful and continuous observation of the superficial lymphatic glands should be maintained and puncture with the needle and examination of aspirated fluid made by smears and culture methods. Finally, let this be emphasized: The early identification beyond any doubt of bubonic plague depended upon the microscope. It was the duty of the attending physician to submit to the bacteriological laboratory slides made from the fluid aspirated from every suspicious bubo and from sputum in every case of pneumonia showing more than ordinary depression at the outset with a bright red sputum instead of the typical rusty sputum of ordinary pneumonia. The services of the public bacteriologist should be available. Possibly it might be wise to require the specimens to be submitted. The only hope of limiting an outbreak was that of a prompt diagnosis of the disease. To-day every seaport of the world was menaced by plague and the menace would be still further increased by the opening of the Panama canal. It, therefore, became the duty of every one of them who practised medicine in a seaport to keep constantly in mind the possibility of encountering the disease. To this end examination of the superficial lymphatic glands during the progress of every acute febrile case became a matter of necessary routine.

Treatment of Plague.—Dr. ISAAC IVAN LEMANN, of New Orleans, said unfortunately the story of the plague therapy was brief and discouraging. The mortality rate of those stricken, without previous prophylactic treatment, was still in the neighborhood of ninety per cent. Their chief and first attention must, therefore, in this disease

above all others, be given to prophylaxis. Several methods of producing active immunity had been proposed. Haffkine, working in India, in 1907, proposed his well known prophylactic. This consisted of a bouillon culture of the pest bacilli, killed by heat and carbolized so as to represent a 0.5 per cent. solution of phenol. The dose of this varied from 0.5 to one c. c., and in special cases as much as twenty c. c. were given, according to Jackson. Llewellys Barker had said that adult males received three to 3.5 c. c., adult females two to 2.5 c. c., children over ten years one c. c., small children 0.1 to 0.5 c. c. of the prophylactic injected subcutaneously. The reaction varied greatly in different individuals; as a rule, there was slight fever, malaise with local swelling, and edema for twenty-four or forty-eight hours. Ten days later, a second, larger dose might be given, the size varying according to the reaction following the first dose. The protection afforded by the prophylactic was not absolute. When repeated several times it afforded a relative immunity for some months. From four to twenty per cent. of the inoculated contracted the disease, and from two to eight per cent. died. Passive immunization by means of sera derived from animals in whom an artificial immunity had been created, had been used prophylactically and therapeutically. The immunity produced by immune sera was said to last but a few days. Aside from the specific treatment the management of a case of plague was entirely symptomatic. Treatment was inaugurated with a brisk calomel purge, followed by a saline. The patient must be kept in bed in a well lighted, well ventilated room. The diet throughout the acute stage should be liquid, principally milk and water with the addition of alcohol, in cases where there was great prostration. Later a soft bland diet was permitted. In convalescence regard must be paid to the probability of change having occurred in heart muscle and in the kidney. The buboes must be dealt with surgically.

As to the treatment of pneumonic plague, the authorities contented themselves with the vague suggestion that expectorants might prove useful. They laid much more stress upon the high degree of contagiousness of pneumonic plague and the great care with which these patients and their sputa must be handled in order to prevent the spread of the disease.

Tamponade Treatment of Accessory Sinuses and Its Effect on Intraocular Inflammation.—Dr. William S. Manning, of Jacksonville, said it was particularly in so called idiopathic cases of those in which there was apparently no cause for the inflammation that he found this treatment of special value. In these cases the ordinary methods were almost valueless. He was thoroughly convinced that chronic frontal sinus and ethmoidal infection were the sole cause of many of these so called idiopathic cases of choroiditis and retinitis. A tampon, of such length and size as would snugly fit between the middle turbinated body and the septum, and extend from the exterior portion of the nose to the sinus posteriorly, was first saturated with an aqueous solution of argyrol, forty grains to the ounce and then introduced. Through capillary attraction, it would deplete the proximate soft tissues and drain the ethmoid cells and other sinuses. In order to drain the maxillary sinuses, these tampons should be placed under the scroll of the middle turbinated body and above the upper part of the inferior turbinated body. It was his custom to allow them to remain *in situ* for from twenty minutes to one hour. The first effect was congestion of the conjunctiva, sneezing, and nasal discharge. On removing the tampons when infection was present, they would be found to be bleached on the upper surface, and sometimes throughout, the bleaching being in proportion to the amount of infection. He had treated by this method five severe cases of idiopathic retinochoroiditis in which blindness threatened, and in every case had obtained splendid results. He had treated by this method twenty-six cases of iritis, and marked improvement followed in all except two, in which syphilis was an etiological factor. By far the largest class of cases that he had treated, however, had been those of obscure frontal headache variously diagnosticated as malaria, gastric, refractive, etc.

Gangrenous Tonsil.—Dr. U. S. Bird, of Tampa, Florida, said that so rare was this disease that it was not a textbook nor reference book subject. Five cases only could be found in medical literature, all of which were fatal. In addition to these he now personally reported five cases, four in patients of his own, and one in the practice of a brother physician. These five cases, as compared to the five previously reported, suggested some interesting conclusions. In the first five cases the mortality was 100 per cent. The cases that he reported included two deaths, but neither of these was due to gangrenous tonsil, which in these cases appeared to be an intercurrent condition, more or less due to the general depression that had rendered them vulnerable to such attacks. In his fourth case only were operative measures indicated. When a small area was involved and the general condition was good, instrumentation was indicated; but in great depression and extensive involvement, two conditions that seemed to be associated, active interference might result unfortunately. Only one of his cases was of interest in connection with pathology, the noma bacillus being present. Unless his experience proved to be unique, it might be assumed that gangrenous tonsils, and the recoveries therefrom, were more observed than the literature suggested.

Fatal Thrombophlebitis of Orbits by Ozena Bacillus.—Dr. M. Feingold, of New Orleans, said that in fact many an affection of the eye and the orbit was dependent upon a primary disease of the nose and its adjoining cavities, had well been recognized, but certain points needed further discussion. He saw in consultation a girl of fifteen years who had an edema of the upper and lower lid, so extensive that the eye could not be opened voluntarily. There was a hard infiltration through the upper lid to the depth of the orbit. The temperature was about 101° F. The patient denied that there had been any previous affection of the nose. An operation was immediately performed, and an extensive focus of sticky, grayish, gelatinous pus was found and evacuated. Necrotic bone was also discovered in the orbit. The patient stood the operation well and spent a comfortable night. The next day, however, pulse and temperature gradually rose and the patient complained of pain in the head. Probing revealed no further focus, but the edema on the right side had increased and dilated veins were visible over the forehead and nose. Atrophic retinitis was found in each side, with crusts and pus in the middle meatus under them. On the following day the Killian operation was performed, and pus was found in the frontal and sphenoidal sinuses. After the operation the patient gradually grew worse and died on the night of the following day. The temperature had reached 106.1° F. with profuse perspiration and very labored respiration. The pus was found to contain a pure culture of *Bacillus mucosus capsulatus*. No post mortem examination was obtained. The interesting points in the case were that a sinus affection might be latent for some length of time, and that orbital affection might be brought about by the affection of the adjoining nasal cavities.

Cæsarean Section.—Dr. John M. Wilson, of Mobile, said the most common indication for Cæsarean section was a contracted pelvis, but there might be other causes, such as uterine myoma, situated at the lower part of the uterus, and ovarian cyst with adhesions, cancerous or undilatable cervix. This operation might be employed in some cases of placenta prævia, as well as in some cases of eclampsia with a very rigid cervix. The success of Cæsarean section depended greatly upon the time when it was performed, the best results being obtained in those cases that could receive the proper preparation and operated on just before or at the beginning of labor. Those cases gave the worst results that had been in labor some time and had had repeated examinations made on them, which were likely to produce, as stated before, an exhausted patient and an infected uterus.

Fee Splitting.—Dr. Stuart McGuire, of Richmond, Va., introduced the following resolutions concerning fee splitting:

Whereas, it is stated that among some physicians there had developed a pernicious custom of commercializing the most intimate and sacred confidence committed to their honor, by referring their patients who needed special or expert treatment to specialists or surgeons, who financially remunerated them for this reference, either by paying a commission or by dividing with the regular physician their fees as specialists or surgeons; and

Whereas, it was prejudicial to individual physicians and to the medical profession at large to allow such injurious rumors to circulate unproved or unchallenged; and

WHEREAS, it was the duty of the profession to protect the honorable position won by generations of faithful, unselfish service; there it was

Resolved by the Southern Medical Association, that they earnestly condemned such dishonorable dealings on the part of any one professing the high calling of medicine; and

Resolved that they urged all State and county medical organizations vigorously to oppose such dishonorable dealings and to appoint investigating committees whose duty it should be to learn whether any of their members were thus dishonoring their calling and if any were so accused to summon them before a tribunal of their professional brethren to be acquitted or convicted of this crime against honor and humanity; and

Resolved that no guilty doctor, whether donor or recipient of such a fee or commission in any way, shape, or manner should be allowed to escape a suitable penalty, such as private reprimand, temporary suspension, or public expulsion; and

Resolved that these resolutions be spread upon the minutes of this association and that a copy thereof be forwarded by the secretary of every State and county medical organization within the geographical limits defining eligibility to membership in this association.

Election of Officers.—The following officers were elected for the ensuing year: President, Dr. Frank A. Jones, of Memphis, Tennessee; first vice-president, Dr. Stuart McGuire, of Richmond, Virginia; second vice-president, Dr. J. D. Love, of Jacksonville, Florida; secretary-treasurer, Dr. Seale Harris, of Mobile, Alabama.

Lexington, Kentucky, was selected as the place for holding the next annual meeting.

Letters to the Editor.

THE LATEST ATTEMPT TO REFORM THE MEDICAL PROFESSION IN NEW YORK STATE.

BUFFALO, *March 31, 1913.*

To the Editor:

Dr. Augustus S. Downing, first assistant commissioner of education, has sent me a copy of Bill 869 now before the Public Health Committee of the Senate, which bill, he asserts, is, it seems to him, "vital to the integrity of the practice of medicine in this State."

The bill provides that the license of a physician may be revoked for certain acts of unprofessional conduct, one of which is "wilfully betraying a professional secret." If, therefore, a physician on the witness stand in court under cross examination answers a question involving a professional secret, such as the infection of a wife by her husband, his license can be revoked. Should he refuse to answer, he is liable to punishment for contempt of court. Furthermore, when a physician who has given a death certificate naming "rheumatism," "narasmus" or "dropsy" as a primary cause of death, is asked to furnish a more accurate certificate, he can contend that to change "rheumatism" into "chronic nephritis," or "marasmus" into "tuberculosis of mesenteric glands," etc., would render him liable to loss of his license. Should this clause become law, fraudulent death certificates will become more common than they now are, and, in my opinion, life insurance companies will be cheated more often than they are at present. Again, if a physician knows that a male patient suffering from a venereal disease intends to marry, he ought not, in the interest of the public health, to be debarred by statute from warning the prospective wife.

Any law which will put out of business the advertising gonorrhea and syphilis "specialists" would confer a great benefit upon the community. But the United States Constitution must be obeyed. Bill 869 proposes to revoke the licenses of all physicians who advertise that they can "cure diseases or defects of the sexual organs." First, what constitutes a *sexual* organ in the legal sense? Is a prolapsed uterus a defect of a sexual organ? Is a hypertrophied prostate? Nobody (except a Christian scientist) would deny that the uterus is peculiar to one sex and the prostate to the other. These matters, however, are unimportant because the clause referred to in the proposed statute is discriminatory and, for that reason, unconstitutional. If one class of physicians is forbidden to advertise, all physicians must be forbidden to do so. Moreover, although excellent results might be obtained by prohibiting all physicians from advertising, the constitutionality of this procedure is doubtful.

Doctor Dowling's pet bill, as printed, is unconstitutional, ambiguous in meaning, and impracticable. He should try again, and this time he should obtain assistance from somebody who knows both medical and legal terms.

LAWRENCE IRWELL, M. A., B. C. L.,
Consulting statistician.

Book Reviews.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

A Reference Handbook of the Medical Sciences. By Various Writers. First and Second Editions Edited by ALBERT H. BUCK, M. D. Third Edition, Completely Revised and Rewritten, Edited by THOMAS LATHROP STEDMAN, A. M., M. D. Complete in Eight Volumes. Volume I. Illustrated. New York: William Wood & Co., 1913. Pp. viii-928.

The first volume of the first edition of this work appeared in 1885, the first volume of the second edition was published in 1900, and the first volume of the third edition has just been issued. In general appearance the new volume is an improvement on its predecessors, the binding, paper, and printing being more attractive. The general plan of the work is the same as before, the chief new feature being the inclusion of several short biographical articles of some of the more noted investigators in medicine and science. This is a distinct gain to the work, and one which will be welcomed by all readers. There are several new contributions of special interest, among which may be mentioned the articles on adolescence, age, albuminuria, anaphylaxis, pernicious anemia, secondary anemia, anesthesia and analgesia, general anesthesia, angina pectoris, animal experimentation, medical anthropology, anthropometry, arrhythmia, acute and chronic arthritis, association, astereognosis, and hygienic relations of the automobile. The new material, taken as a whole, is of a high order of merit, and we wish there were more of it. Unfortunately, a large part of the volume is taken up with the matter that appeared in the second edition, and in some cases even in the first edition. The first and third articles, on the surgical anatomy of the abdomen, are practically reprinted from the former edition. The same may be said of the article on abdominal injuries. Thus, except for the insertion of a few B. N. A. terms and the addition of a few lines here and there, the first twenty pages contain nothing new. Indeed, if we exclude the two and a half pages on abdominal section, the first forty pages contain hardly one page of new material. The article on abortion has certainly done yeoman service; with a few trivial alterations it is just as it appeared in the first edition as the work of our late editor, Frank P. Foster; it also appeared in the second edition over the same honored name; here, it is credited to a new writer, who has done almost nothing except to substitute his own name for that of the scholar who wrote the article. Doctor Foster's article on amenorrhea has been similarly listed, adopted, and appropriated as it appeared in the first and second editions of this work. This is certainly a cheap and easy way to earn distinction as an "author," but is it allowable? We cannot get the viewpoint of a man who appends his name to, and so claims as his own, some eight columns of printed matter, of which he himself has written only about a dozen or twenty lines. The articles on criminal abortion, therapeutic abortion, abscess, and absorption, are practically reprinted from the former edition—possibly some half dozen lines have been added to them. Other articles of which the same may be said, are acanthosis nigricans, active constituents of plants, adenoma, agenesis, etc. So we might go on. Of the first 150 pages probably over one hundred are taken from the former edition. Our space will not allow us to go through the remainder of the volume, and we will draw attention to only one more article,

that on the important subject of amputation. This article of nearly forty pages was written for the first edition, about thirty years ago; it received a few slight additions in the second edition, and again appears with the addition of about a couple of pages of new matter. Not only the text, but the illustrations, have again been pressed into service. Of the seventy-seven cuts in the third appearance of this article nearly seventy are to be found in the 1885 edition. These illustrations, showing the operator and his assistants with coat sleeves and cuffs slightly turned back, will certainly give foreign readers a very antiquated and erroneous idea of American methods of asepsis. These cuts, with several others, have a decidedly antique appearance, and should have been destroyed years ago; they are entirely out of place in a book with the pretensions of the *Reference Handbook*. The claim on the title page that this edition has been "completely revised and rewritten" does not seem to be borne out by the facts. The article on amputation looks as if much of it had not been read by either author or editor. "*Early in the last century* J. L. Petit originated the first decided improvement . . ." (First edition 1885, page 143; third edition 1913, page 263). "Amputation by a single circular incision down to the bone has since been revised by Louis and Brünninghausen *in the beginning of our century* . . ." (First edition, 1885, page 143; third edition, 1913, page 263). Some one must have been asleep for a hundred years. Again; "*Nearly a year ago* a lad of eighteen had his left arm caught in the belt of a wheel" . . . (First edition, 1885, page 144; third edition, 1913, page 265. All the italics are ours.) Time apparently moves with leaden feet in Cincinnati and New York.

Where there is so much matter repeated from edition to edition we can only conclude that the original articles were of such superlative merit that improvement is considered impossible, or that but little advance has been made in medical science during the past fifteen or thirty years, or that the publishers find it cheaper to reprint matter of which they hold the copyright than to pay for new matter. We can only surmise which is the true explanation. Owners of the second edition will probably find that they already have considerably more than half of the present volume; they should therefore hesitate before indulging in the possession of a work which can hardly be said to live up to the promise of the prospectus that it is "almost completely rewritten."

Surgical Operations with Local Anesthesia. By ARTHUR E. HERTZLER, M. D., Surgeon to the Halstead Hospital, Halstead, Kansas. New York: Surgery Publishing Company, 1912. Pp. ix-205. (Price, $2.)

This work, as the author points out, is intended for the general practitioner and for the surgeon who works far from the conveniences of a hospital. Those whom the author had in view have reason to be grateful for an admirable little book, which as far as it goes is authoritative, for Doctor Hertzler describes nothing that he has not accomplished personally. The style is clear and simple, the 104 illustrations, semidiagrammatic in nature, are ample, and the book itself, with its handsomely rubricked hints in the margin, is a most creditable production of the publishers.

Diet and Hygiene in Diseases of the Skin. By L. DUNCAN BULKLEY, A. M., M. D., Physician to the New York Skin and Cancer Hospital, etc. New York: Paul B. Hoeber, 1913. Pp. xiii-194. (Price, $2.)

This volume contains a series of six clinical lectures delivered at the New York Skin and Cancer Hospital. These lectures are an epitome of the author's personal views and experiences along the lines of diet and hygiene in diseases of the skin, as observed mainly in private practice, augmented, however, by the scientific support of the latest literature on the chemistry of foods and nutrition. With the premise that the rebelliousness and recurrence of many cutaneous affections indicate some underlying cause, he takes up the question of faulty metabolism and autointoxication and their relation to skin lesions, errors in diet and their mode of operation, and the elements affecting digestion, the dangers of an excess of nitrogen in the food, and the danger signals exhibited by the skin. After a consideration of the various articles of diet and their relation to skin diseases, the author discusses in a general way the principles of diet in the various cutaneous disorders, together with the importance of proper hygiene. In a well filled appendix practical and definite dietaries are outlined, in which are included a great diversity of cereals and other vegetable products.

The subject matter in this volume supplements the information usually found in the various standard works on diseases of the skin.

Treatment after Operations. By WILLIAM TURNER, M. S., F. R. C. S., Senior Surgeon to the Dreadnought Seamen's Hospital, Greenwich; and E. ROCK CARLING, B. S., F. R. C. S., Surgeon to the Dreadnought Seamen's Hospital, Greenwich; with a Chapter on the Eye by L. V. CARGILL, F. R. C. S., Senior Ophthalmic Surgeon and Lecturer in Ophthalmology, London School of Tropical Medicine, etc. London: University of London Press, 1912. American Agents, Oxford University Press, New York. Pp. x-247. (Price, $3.75.)

This is a very good book, particularly well adapted for nurses and hospital internes, but useful also to all practitioners who only occasionally have to conduct the aftertreatment of a surgical case. Beginning with the management of the sick room, and of patients recovering from a general anesthetic, the aftertreatment of a multitude of operations on all parts of the body is presented in careful detail. A very commendable point is that the individual practices of the writers' are presented, rather than a collection of the opinions of others, for they state at the outset that they have made little reference to other books. This gives a certain freshness to the writing, and a weight to their opinions as the result of personal experience, although experienced surgeons and nurses may find some things to criticise. It is not to be expected indeed that the details will conform in every respect to those observed in every hospital, for the methods of no two hospitals and of no two surgeons agree in every detail. But this is a good guide to those who need one, and those who do not may gain from a perusal of its unhackneyed directions. The final chapter, on the aftertreatment of operations on the eye, is open to the same line of criticism, but is an excellent addition to the work.

Die akute allgemeine Miliartuberkulose. Von Prof. Dr. G. CORNET, in Berlin und Reichenhall. Zweite, Auflage. Wien und Leipzig: Alfred Hölder, 1913. Pp. 79.

An article by Doctor Cornet on tuberculosis needs little recommendation. In this contribution of sixty-five pages to Nothnagel's system of medicine the author gives a clear picture of the various phases of this usuallly rapidly fatal form of tuberculosis, one that may occur at any age, old or young. In various chapters are presented the etiology, pathological anatomy, symptoms, course, diagnosis, and prognosis; and a final, but very brief one, dealing with prophylaxis and treatment. This treatise is a very good one and is of added value on account of the many references to the literature.

Meetings of Local Medical Societies.

MONDAY, *April 7th.*—Clinical Society of the New York Throat, Nose, and Lung Hospital; German Medical Society of the City of New York; Utica Medical Library Association; Niagara Falls, N. Y., Academy of Medicine; Practitioners' Club, Newark, N. J.; Hartford, Conn., Medical Society; Brooklyn Hospital Club; Roswell Park Medical Club, Buffalo; Hornell Medical and Surgical Association (annual).

TUESDAY, *April 8th.*—New York Academy of Medicine (Section in Neurology and Psychiatry); Medical Society of the County of Schenectady; Practitioners' Club of Jersey City; Medical Society of the County of Rensselaer; Buffalo Academy of Medicine (Section in Medicine); New York Obstetrical Society; Jamestown Medical Society; Rome, N. Y., Medical Society.

WEDNESDAY, *April 9th.*—New York Pathological Society; Medical Society of the Borough of the Bronx; Alumni Association of the City Hospital; Brooklyn Medical and Pharmaceutical Association; Alumni Association of the Norwegian Hospital, Brooklyn; Richmond County Medical Society; Dunkirk and Fredonia Medical Society.

THURSDAY, *April 10th.*—New York Academy of Medicine (Section in Pediatrics); Brooklyn Pathological Society; Blackwell Medical Society of Rochester, N. Y.; Jenkins Medical Association, Yonkers; Society of Sanitary and Moral Prophylaxis; Auburn City Medical Society; Buffalo Ophthalmological Club; Society of Physicians of the Village of Canandaigua; Gloversville and Johnstown Medical and Surgical Association; Physicians' Club of Middletown; West Side Clinical Society, New York.

FRIDAY, *April 11th.*—New York Academy of Medicine (Section in Otology); Society of Clinical Serology, New York; New York Society of Dermatology and Genitourinary Surgery; Eastern Medical Society of the City of New York; Society of Ex-Internes of the German Hospital, Brooklyn; Saratoga Springs Medical Society; Society of Alumni of St. Luke's Hospital (annual).

SATURDAY, *April 12th.*—Therapeutic Club, New York.

Official News.

United States Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending March 19, 1913:

Banks, C. E., Senior Surgeon. Granted one day's leave of absence, March 12, 1913. **Fox**, Carroll, Passed Assistant Surgeon. Granted seven days' leave of absence, en route to Washington, D. C. **Francis**, E., Surgeon. Granted two days' leave of absence, March 5th and 6th, under paragraph 191, Service Regulations. **Krulish**, E., Passed Assistant Surgeon. Directed to return to Juneau, Alaska, and continue his duties under the direction of the Bureau of Education, Department of the Interior; granted fourteen days' leave of absence en route to Juneau, Alaska. **Kucera**, J. F., Acting Assistant Surgeon. Granted twenty-two days' leave of absence from February 28, 1913. **Markoe**, W. W., Acting Assistant Surgeon. Leave of absence for thirty days from February 1, 1913, amended to read "twenty-four days' leave of absence from February 1, 1913." **Mullan**, E. H., Passed Assistant Surgeon. Granted seven days' leave of absence, on account of sickness, from February 26, 1913. **Ridlon**, J. R., Passed Assistant Surgeon. Granted one day's leave of absence en route to station. **Stimpson**, W. G., Surgeon. Directed to proceed to Marcus Hook, Pa., for the purpose of looking into the quarantine inspection of vessels arriving upon the Delaware River. **Sundwall**, John, Assistant Surgeon. Granted leave of absence, without pay, from December 2, 1912, to July 1, 1913. **Terry**, M. C., Acting Assistant Surgeon. Granted thirty days' leave of absence from April 1, 1913. **Walker**, W. S., Acting Assistant Surgeon. Granted two days' leave of absence, without pay, March 7 and 8, 1913.

Boards Convened.

Boards of medical officers convened for the physical examination of officers of the Revenue Cutter Service to determine their fitness for promotion, as follows:

At the Marine Hospital, Stapleton, N. Y., Monday, April 7, 1913, at 11 a. m. Detail for the board: Senior Surgeon H. W. Austin, chairman; Passed Assistant Surgeon William M. Bryan, recorder.

At the Marine Hospital office, Seattle, Washington, Monday, April 7, 1913, at 11 a. m. Detail for the board: Surgeon B. J. Lloyd, chairman; Acting Assistant Surgeon F. R. Underwood, recorder.

United States Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending March 29, 1913:

Darnall, M. H., Lieutenant, Medical Reserve Corps. Relieved from active duty on March 21, 1913. **Fauntleroy**, P. C., Major, Medical Corps. Ordered to proceed to Columbus, Ohio, and report to the Governor of Ohio for duty with flood relief work. **Goldthwaite**, Ralph H., Captain, Medical Corps. Upon arrival in the United States will proceed to Fort Hamilton, N. Y., for duty. **Hutton**, P. C., Major, Medical Corps. On leave in Chicago, will proceed to Columbus, Ohio, and report to Major Powell C. Fauntleroy for duty pertaining to flood relief work. **Levanture**, L. A., First Lieutenant, Medical Reserve Corps. Upon arrival in the United States, will proceed to Fort Sam Houston, Texas, for duty. **Poust**, Luther R., First Lieutenant, Medical Corps. Relieved from temporary duty in the Southern Department and from duty at Fort Riley, Kansas, and will proceed to the Army General Hospital, Fort Bayard, N. M., for duty, relieving Captain George H. Scott, Medical Corps, who will proceed to Fort Jay, N. Y., for duty. **Priest**, Howard, First Lieutenant, Medical Corps. Will proceed to his home and is relieved from active duty at Fort George Wright, Washington; leave of absence granted for one month and twelve days. **Simpson**, J. A., First Lieutenant, Medical Reserve Corps. Upon arrival in the United States will proceed to Fort Moultrie, S. C., for duty. **Wilds**, Robert H., First Lieutenant, Medical Reserve Corps. Ordered to active duty in the service of the United States, on account of an existing emergency, and will report to the Commanding Officer, Fort Leavenworth, Kansas, for duty.

Births, Marriages, and Deaths.

Married.

Baker—Weldie.—In New York, on Saturday, March 15th, Dr. Carroll Royal Baker, Medical Corps, United States Army, and Miss Florence M. Weldie. **Clark—Bronson.**—In Onondaga, N. Y., on Wednesday, March 26th, Dr. Howard Fitzgerald Clark, of Syracuse, and Miss Lillian Belle Bronson. **Golly—Dingman.**—In Mount Forest, Ontario, on Tuesday, March 25th, Dr. Joseph Lloyd Golly, of Rome, N. Y., and Miss Marion A. Dingman. **Mosher—Clark.**—In Boston, on Saturday, March 22d, Dr. Harris Peyton Mosher and Miss Helen A. Clark. **Novak—Rogers.**—In Boston, on Monday, March 24th, Dr. Emil Novak, of Baltimore, and Miss Elizabeth Grace Rogers.

Died.

Beede.—In Auburn, Me., on Friday, March 21st, Dr. Joshua W. Beede, aged eighty-one years. **Bristow.**—In Brooklyn, N. Y., on Wednesday, March 26th, Dr. Algernon Thomas Bristow, aged sixty-two years. **Chamberlin.**—In New York, on Saturday, March 29th, Dr. Frank Warren Chamberlin. **Currey.**—In Beverly, N. J., on Monday, March 24th, Dr. Joseph Currey. **Dolph.**—In Sodus, N. Y., on Wednesday, March 26th, Dr. Benjamin VanEtten Dolph, aged thirty-eight years. **Francis.**—In Montclair, N. J., on Saturday, March 29th, Dr. Richard Pearce Francis. **French.**—In Natchez, Miss., on Thursday, March 20th, Dr. James Clement French, aged fifty-eight years. **Hayes.**—In Somersworth, N. H., on Friday, March 21st, Dr. John Alfred Hayes, aged seventy-four years. **Hazeltine.**—In Clarksville, Mich., on Tuesday, March 18th, Dr. Lewis Hayward Hazeltine, aged seventy-five years. **Lapointe.**—In Biddeford, Me., on Sunday, March 23d, Dr. Jovite A. Lapointe, aged sixty-nine years. **McClellan.**—In Philadelphia, on Saturday, March 29th, Dr. George McClellan. **Reber.**—In Reading, Pa., on Wednesday, March 19th, Dr. Mayberry S. Reber, aged seventy-five years. **Saeger.**—In Allentown, Pa., on Monday, March 24th, Dr. Luther Jacob Saeger, aged thirty-five years. **Shupe.**—In Connellsville, Pa., on Saturday, March 22d, Dr. Marcellus B. Shupe, aged fifty-six years. **Stedman.**—In Denver, Colo., on Saturday, March 22d, Dr. Arnold Stedman, aged seventy-four years. **Stewart.**—In New York, on Saturday, March 29th, Dr. Hugh Angus Stewart, aged thirty-one years. **Sugg.**—In Clinton, Iowa, on Friday, March 21st, Dr. John F. H. Sugg, aged sixty-eight years. **Taylor.**—In Richmond, Ky., on Thursday, March 20th, Dr. T. J. Taylor, aged sixty-four years. **Trotter.**—In Yonkers, N. Y., on Friday, March 28th, Dr. Richard R. Trotter, aged sixty-five years. **Van Gieson.**—In New York, on Monday, March 24th, Dr. Ira Van Gieson, aged forty-seven years. **Young.**—In Newark, N. Y., on Wednesday, March 26th, Dr. Joseph Coddington Young, aged sixty-five years.

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Communications.

POLIOMYELITIS AND VARIOLA

A Discussion of Their Etiology.

By FREDERICK PROESCHER, M. D.,
Pittsburgh.

POLIOMYELITIS.

The successful transmission of acute poliomyelitis to monkeys by Landsteiner and Popper (1), Flexner and Lewis (2), Landsteiner and Levaditi (3), Leiner and Weisner (4), and Knopfelmacher (5), has made possible the experimental study of this disease. Poliomyelitis of the monkey is clinically, pathologicoanatomically identical with human poliomyelitis, as has been shown by the excellent work of Flexner and Lewis and their coworkers. The virus is constantly found in pure organic cultures in the central nervous system. It is seldom found in the large internal organs. It belongs to the easy filterable viruses. It passes the Berkefield filters V and N, Chamberland, Reichel and Pukall filters (Landsteiner and Levaditi, Flexner and Lewis, Leiner and Weisner).

This proves that it does not belong to the common microorganisms, and that the microorganisms found from time to time with the ordinary staining and cultivation methods were secondary infections. To a certain extent, the virus is resistant to freezing and drying and to glycerin. Peculiar cell inclusions as in rabies are found in the nerve and glia cells of the spinal cord of infected human beings and monkeys (Bonhoff, Proescher). The biological properties are therefore similar to those of the virus of rabies and may have the same staining properties.[1]

With methylene azure carbonate (6) I found a great number of small cocci in smears of the spinal cord from a case of human poliomyelitis. To confirm these findings, I examined the central nervous system of monkeys inoculated with poliomyelitis virus. For the virus for experimental purposes, I am indebted to Professor Flexner, of Rockefeller Institute.

Two monkeys were inoculated intracerebrally. They were killed with ether during the paralytic stage. The brain and spinal cord were removed under aseptic precautions and different parts of the same were at once emulsified and inoculated in numerous bouillon-agar and serum tubes. Anaerobic cultures were made in glucose agar. All the culture media remained entirely sterile after incubation of several days at 37° C.

Thin smears were made from the emulsified brain and cord on clean cover glasses. The smears were fixed in methyl alcohol and stained from one half to two hours in a one per cent. carbolmethylene azure carbonate solution (0.1 gramme azure carbonate Unna-Grüebler to ten c. c. distilled water and 0.1 c. c. concentrated carbolic acid); then washed in water and when necessary differentiated in equal parts of acetone and alcohol and mounted in Damar balsam. The following microorganisms were found:

Extremely small cocci stained pale blue, deep blue, or metachromatic violet. These were on the limit of visibility (0.1 micron), appearing single or in chains or groups. Deep blue diplococci shaped like gonococci, approximately 0.2 micron in diameter; short, thick, oval bacilli, about 0.1 micron long, in form of diplobacilli, and single ones, one to two micron long, stained deep blue: slender bacilli, about two micron long, stained pale blue; a spirochete form, from three to five micron long, slightly curved, and stained pale blue. The bacilli are the predominating form. The virus is extracellular and intracellular and intranuclear.

So far, the following method has proved the best for staining the microorganism in sections: The tissue is fixed in concentrated bichloride solution for three to six hours at 37° C. The tissue is then washed in running water for twenty-four hours, immersed in iodine solution[2] for twenty-four hours, then immersed in ninety-six per cent. alcohol until all the iodine is washed out, and imbedded in paraffin in the ordinary way.

Before staining, the thin sections are immersed for ten minutes in a solution of potassium iodide (2 grammes + 100 c. c. distilled water + 3 c. c. Lugol's solution), then washed in water and immersed in 0.5 per cent. sod. thiosulphate until the iodine color fades entirely. They are then washed several times in distilled water, stained with carbolazure carbonate solution for one half hour, washed in water, dried with filter paper, immersed in ten per cent. pyridine solution (pyridin purissimum) for three to five minutes, washed in water, dried

[1]In rabies were found: Barely visible small round cocci, either violet or blue; their diameter is approximately less than 0.2 micron: diplococci 0.3 to 0.5 micron in diameter, some of them like gonococci; thick oval bacilli about 0.5 micron long; slender bacilli, straight or slightly bent, their ends thinner than the body, similar to the fusiform bacilli and 1.5 micron long, 0.1 micron thick; thick bacilli with blunt ends, 2.5 micron to 3 micron long and 0.3 micron thick, stained deep blue; bacilli, isolated or in clumps, about 1.5 micron long, stained metachromatic; curved filaments 2 to 3 micron long, some with cocciforms on one end or the centre of the filament; slender bacilli about 3 micron long, ends slightly bent, others decidedly curved and some of these forms segmented; also straight, thick bacilli 2.5 to 4 micron long, ends either square or slightly rounded, homogeneous, stained deep blue; a few spirochetes, 2 to 7 micron long with wide turns and stained pale blue.

[2]One half gramme potassium iodide is dissolved in 5 c. c. water plus 0.2 gramme iodine dissolved in 45 c. c. of ninety-six per cent. alcohol. This mixture is diluted half with ninety-six per cent. alcohol.

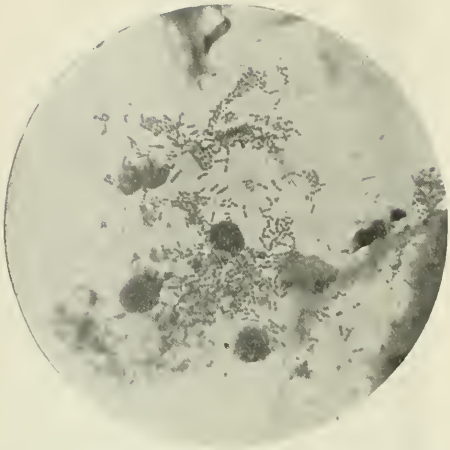


FIG. 1.—Poliomyelitis virus. Flexner. Smear of spinal cord. Methylene azur. Ocular 4, oil immersion 1/12. Showing extracellular and intracellular bacilli forms.

well with filter paper, washed in absolute alcohol for one half to one minute. Clear in xylol and mount in Damar balsam. With this method counterstaining is not necessary.

The neuroglia are stained pale or light blue, the ganglion cells deeper blue with well differentiated nuclei. The microorganisms appear deep blue, intracellular, intranuclear, and between the nerve fibres and the neuroglia mesh work. They seem to be very irregularly distributed and are found in clumps. Sometimes many sections must be examined to find them.

The presence of the spirochete indicates that the virus may travel actively inside the nerve fibres, as illustrated by the injection of the virus into the larger peripheral nerve trunks, and also by Rosenau, who demonstrated that the artificially infected stable fly, through its bite, can transmit the disease to monkeys. The virus has never been demonstrated in the blood, and it is therefore probable that on being implanted through the bite of the fly, the virus travels along the nerve fibres.

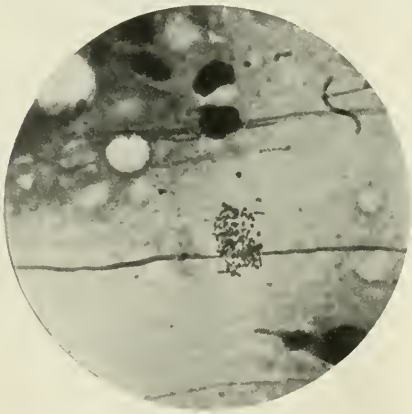


FIG. 2.—Poliomyelitis virus. Flexner. Smear of brain. Methylene azur. Ocular 4, oil immersion 1/12. Showing bacilli and cocci forms.

The general opinion as to the ordinary mode of infection, is that the virus travels from the nasal mucous membrane through the lymph vessels which accompany the nerve fibres of the olfactory nerve, through the lamina cribrosa into the arachnoidea, into the brain substance and spinal cord. But I think it may be that the virus travels actively through the olfactory nerve into the central nervous system and is not passively carried through the lymph stream.

CULTIVATION OF THE VIRUS.

Many efforts have been made to cultivate the poliomyelitis virus. Flexner and Lewis and Levaditi inoculated the filtrates from spinal cord emulsion into bouillon to which rabbit or monkey serum was added. The bouillon became cloudy after several days' incubation at 37° C., but on reinoculation in the same culture serum, the cloudiness was observed only twice. The proof of these being true cultures has not been given. Levaditi was able to find round or oval and sometimes groups of very small bodies in the cloudy fluid with Loeffler's mordant and Giemsa stain.

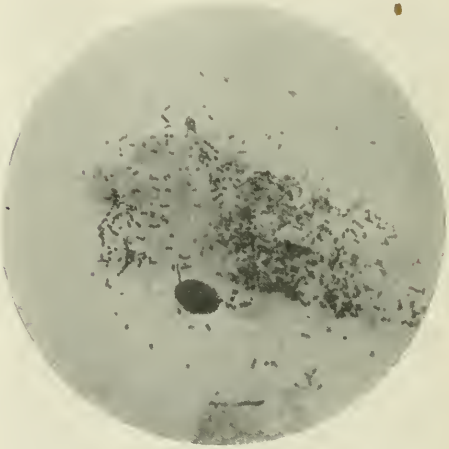


FIG. 3.—Poliomyelitis virus. Flexner. Nerve cell filled with microorganisms. Methylene azur. Ocular 4, oil immersion 1/12.

On account of the extremely small size of these bodies, it is a question whether they were stained precipitates or cocci identical with those which I found with methylene azure.[3]

Flexner and Noguchi (7) have recently resumed their efforts toward the cultivation of poliomyelitis virus. They used ascitic agar or brain extract, to which fragments of sterile rabbit kidney were added and cultivated under anaerobic conditions. In the

[3]Herein lies the priority in the demonstration of the causative microorganism of poliomyelitis. Hitherto, no microorganism has been made visible in an otherwise sterile spinal cord in human poliomyelitis. (NEW YORK MEDICAL JOURNAL, January 4, 1913.)

first medium no growth was perceived, but in the second, after several days, minute colonies showed, clouding the tubes. The colonies consist of globular or globoid bodies which average from 0.15 to 0.3 micron in young cultures, and are arranged in single, double, short chains and masses. In older cultures, bizarre forms were noted. With Giemsa solution, they stained reddish violet, and appeared to be identical with bodies demonstrated by Noguchi in films prepared from nervous tissues. The third culture obtained from human strain and the fifth culture from monkey tissue caused typical poliomyelitis in monkeys.

If these are true cultures or only diluted virus carried over accidentally which produce disease, they do not decide. However, they have in progress a third series of inoculations with older generations of the cultures, which should exclude the possibility of carrying over original virus with the culture of

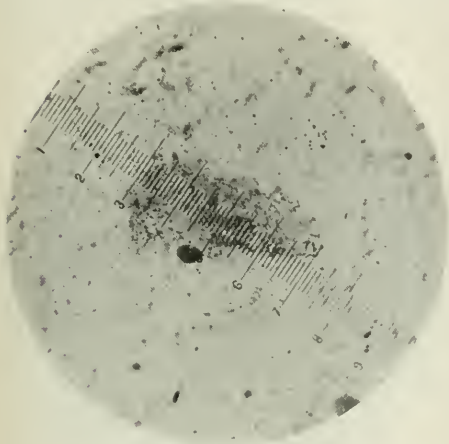


Fig. 4.—Same as Fig. 3, photographed with ocular micrometer.

globoid bodies sufficient to cause paralysis in the inoculated monkeys.

VARIOLA.

Since the inauguration of the modern bacteriological era, many efforts have been made to demonstrate the causative agent of variola, but it may be asserted that none of the many microorganisms, including those described by Prowazek and Paschen are generally accepted as the causative microorganism.

Under Koch's guidance, Wassermann (8) has shown that the virulent contents of the variola pustule, previous to the suppurative period, is free from visible microorganisms and is absolutely sterile on the common culture mediums. This proved that the variola virus does not belong to any form of the commonly known microorganisms; therefore all microorganisms described previously or later may be disregarded as the causative agent of variola. This is further confirmed by the production of typical pustules by inoculation with otherwise sterile vaccine.

Certain investigators, as L. Pfeiffer and Van der Loef, described protozoalike formations in the pustular contents, and believed these to be the specific microorganisms of the disease. Guarnieri found similar formations in the vaccinated cornea of rabbits and believed these to be the virus of variola, which he designated as *Cytorcycetes vaccinæ*. He stated that the same shows a certain developing cycle. Wasielewski was of the same opinion. Protozoalike microorganisms were further described by Councilman, Dombrowski, Bosc, Thomson, Foa, and others.

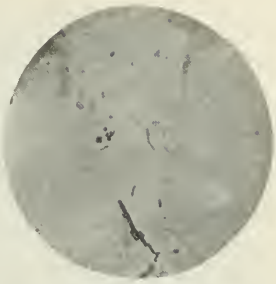


Fig. 5.—Poliomyelitis virus. Flexner. Smear of spinal cord. Methylene azure. Ocular 4, oil immersion 1/12. Spirochete form.

In 1898, Hueckel showed that the Guarnieri bodies are developed from certain parts of the protoplasm of the epithelial cells, and he was able to produce similar bodies by irritation of the cornea with osmic acid.

Siegel asserted that he had found protozoic formations in the blood and organs of vaccinated rabbits. His crude technic of diluting the blood and tissue with distilled water destroys the cells so that all kinds of pseudoprotozoic formations are formed.

Thorough investigations by Prowazek have shown that the Guarnieri bodies are not the variola microorganism. They are not protozoa, and he did not observe different developing stages. He described round and oval bodies which he found in the protoplasm of the epithelial cells, thought they were developing stages of variola virus, and designated them as "initial bodies."

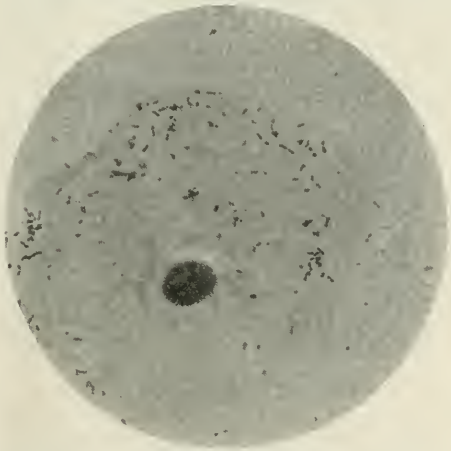


Fig. 6.—Smear from variola pustule. Methylene azure. Ocular 4, oil immersion 1/12. Showing epithelial cell filled with cocci and bacilli forms.

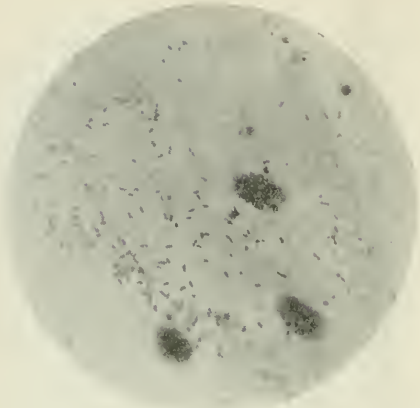


FIG. 7.—Same as Fig. 6, showing intranuclear located microorganisms.

In 1905 (12), I concluded from the previous investigations and from my extensive staining experiments that the variola virus has not as yet been made visible and cannot be made visible by any of our common staining methods. Its invisibility in fresh condition is probably due to its light refracting condition. I also predicted that the variola virus would be found to lie inside microscopical visibility.

In 1905 (13), Negri first demonstrated that the variola-vaccine virus could be filtered through Berkefeld filter V. He asserted that the failure of earlier investigation was due to incomplete destruction of the epithelial cells containing the virus. The material must be thoroughly crushed and shaken, and filtered through several layers of cotton and filter paper prior to filtration through the Berkefeld filter. The filtrate must be thoroughly rubbed in the skin or cornea to obtain positive inoculation results. The filtration results were confirmed by Remlinger and Nouri, Vincent, M. Nicolle, Abdil Bey, Carini, Levi Della Vida.

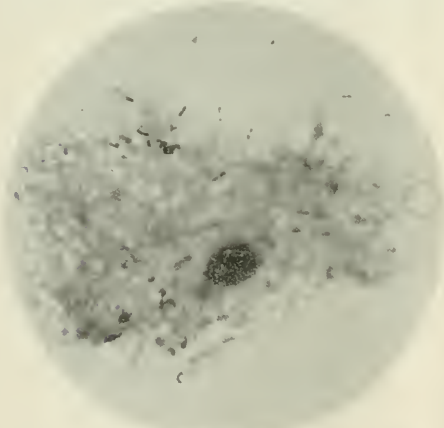


FIG. 8.—Original smear of fixed virus. Pasteur Institute, Paris. Metbylene azure. Ocular 4, oil immersion 1/12. Showing bacilli form microorganisms.

In 1906, Casagrandi announced filtration of the virus through Berkefeld filters N and W as well as V, and also through Chamberland filter F and Kitasato B. After several failures, Paschen (14) finally succeeded in filtration of vaccine virus through Berkefeld filter V.

In their latest attempt to make variola virus visible, Prowazek and Baurepaure used the colloidal filter method. The diluted contents of variola pustules was filtered, first through a Berkefeld filter, then through a layer of agar. From the residue on the agar, smears were made and stained with Loeffler's carbol fuchsine, Giemsa, and thionine. They found roundish formations which were smaller than the smallest known bacteria. Unstained, they appeared as very minute light refracting bodies. With this same method Paschen found similar bodies in the pustular contents in vaccinated children. Also, Volpino in 1907, with the dark field illuminator,

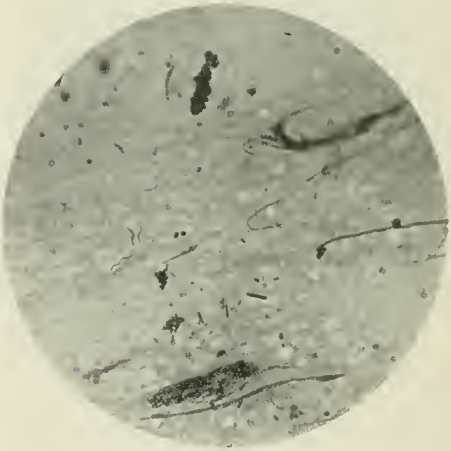


FIG. 9.—Original smear of fixed virus. Pasteur Institute, Paris. Methylene azure. Ocular 4, oil immersion 1/12. Showing spirochete and cocci forms.

found round, slightly refractable, movable bodies which were usually intracellular. In smears they could not be stained with either Giemsa or hematoxylin. I believe all these bodies as described to be stained detritus.

The smallpox epidemic in Pittsburgh, September, 1912, afforded me the opportunity to examine about thirty cases. The pustular contents were taken with sterile glass pipettes previous to the suppurative stage. Smears were made only from such cases as proved to be entirely sterile on our common culture media. Twenty of these proved to be absolutely sterile. With the hanging drop method, no microorganism could be seen. With dark field illuminator, many fine corpuscles were seen, but no definite conclusion could be reached on account of much cellular detritus. With the common staining methods no microorganisms were made visible. Smears

stained according to Prowazek and Paschen with Loeffler's flagella mordant and stained with carbol fuchsine, Giemsa, or thionine, showed no microorganisms whatever, but minute bodies which, I believe, are stained protein substances.

Smears from sterile pustular contents stained with methylene azure carbonate showed many microorganisms, their size ranging less than 0.2 micron to one micron. There were isolated or diplobacilli; chains or groups of short oval bacilli; very small diplococciform pneumococci and bean shaped diplococci, all divided by a small, pale stained zone; large, round cocci, sometimes divided into four parts like tetragenus. The majority of these microorganisms were intracellular and quite often intranuclear. Some of the epithelial cells were entirely filled with these microorganisms. Extracellular, they were few in number. These were also found in different strains of glycerinated vaccine and in the filtrate of greatly diluted vaccine filtered through Berkefeld filter V.

CULTIVATION.

Results from attempts to cultivate variola virus have not proved that these are true artificially grown cultures. Vanselow and Czaplewski cultivated a staphlococcus, and Kent a diplococcus from variola vaccine and asserted that these cultures inoculated in a heifer produced typical pustules.

These cultivation experiments are without value because there are no controls made which show the limit of dilution of the original virus which produces pustules. The staphlococcus and diplococcus were contaminations which concealed the vaccine virus.

More exact were the experiments of Ishigamis (15), who used as artificial medium fresh epithelium cells from cattle. The original diluted virus, one to 1,000, one to 2,000, one to 3,000, did not produce pustules by inoculation in a heifer, but if the dilution one to 1,000 was kept for five to seven days at 37° C. and then diluted one to 2,000 or one to 3,000 with the same fresh culture medium and each of these kept for five to seven days at 37°, the inoculation from all these dilutions showed typical pustules. Bonhoff (16) used a certain culture medium, consisting chiefly of alcoholic extracts from certain organs, and says a few pustules could be produced with the seventh generation of the vaccine culture.

I employed horse blood plasma, which was treated with calcium chloride and coagulated at 60° C., as a culture medium. Completely sterile but otherwise potential variola vaccine was used for the cultures. On this medium, kept at 37° C. under aerobic conditions, a grayish white smeary growth was observed, but with the ordinary staining methods no microorganisms could be found. The inoculation of these cultures in the third and fourth generations produced small but distinct pustules, but beyond these no pustules were obtained, although avirulent cultures could be carried on indefinitely.

Convincing proof that the variola virus has been artificially grown is not yet forthcomnig, because the virulence of the culture is lost after a few generations. This indicates an original diluted virus rather than a growth of the culture.

SUMMARY.

Rabies, poliomyelitis, and variola viruses can be made visible with methylene azure carbonate; their invisibility is therefore not due to their submicroscopical size, but to their special staining properties.

The size of all these viruses averages the same. The smallest visible forms are about 0.1 micron to 0.2 micron or border on the line of microscopical visibility. This size corresponds to that of the smallest pores of the filter, which Esmarch and Rosenthal (17) believed to be the actual pore size of the earthen filters. They found in microscopical sections of stained earthen filter masses, that the smallest visible clefts were from 0.1 to 0.2 micron, and concluded that only through these clefts the microorganism can pass. According to this, the term filterability does not mean microscopical invisibility. The filterability depends, as will be seen, on a certain chemical constitution of the protoplasmic substance which enables them to pass the smallest filter pores. We have seen that the filterability of these three viruses is not equal, and we can distinguish between difficult and easily filterable viruses. The poliomyelitis virus is the easiest filtered, through all kinds of filters. The variola and rabies virus is very difficult to filter, especially rabies virus, which will pass the Berkefeld filter V only in small quantities.

The difference in the filterability of these viruses demonstrates clearly that not only the size but also individual differences in the chemical constitution of the protoplasmic substance play a rôle in the filterability. If the size alone controls the filterability, all three viruses should pass the same filters with the same ease as the poliomyelitis virus.

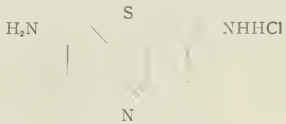
The staining properties of these viruses may give a key to their chemical constitution which will satisfactorily explain not only the cause of filtration but their other peculiar biological properties.

It is necessary to refer to the chemistry of the aniline dye group from which the methylene azure is derived. The methylene azure belongs to the group of thiazine dyes, of which the methylene blue is the main representative.

The simplest body of this group is the thiazine, but is only of interest theoretically.

Thiazine (imidothiodiphenylimid)

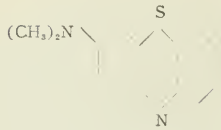
The amido derivative is the thionine.



Thionine chloride.

If for both H atoms, of one of the amido groups of the thionine are substituted by two methyl groups, we obtain dimethylthionine. If all four H atoms of the amido groups are substituted by four methyl groups, the tetramethylthionine or methylene blue is obtained.

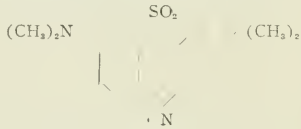
Dimethylthionine (chloride).



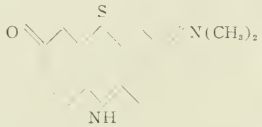
Tetramethylthionine (chloride).

By the action of alkali on methylene blue, two different products are obtained.

Methylene azure, free base (Bernthsen).



Methylene violet (free base).



Michaelis pointed out that the character of methylene azure is more like thionine. Later on, Kehrmann showed that the methylene azure is not a sulphone as believed by Bernthsen, but a mixture of trimethylthionine and asymmetrical dimethylthionine, chiefly the latter. This was then confirmed by Bernthsen.

The methylene blue is distinguished from the foregoing thiazine bases by its strong basic character. It is chemically an ammonium base and cannot be obtained from its salts by caustic alkalies, but with fresh precipitate silver oxide, and is the same color as its salts and is readily soluble in water. The caustic alkali splits the methylene blue into methylene azure and methylene violet. This is the difference from other thiazine dyes which have the character of amine bases; their free bases are precipitated from their salts by caustic alkalies. Their free bases are soluble in ether giving a red or yellow red color; in chloroform, violet to violet red color; in carbon bisulphide, a carmine red color.

I found that the thiazine bases are also soluble in neutral fats and higher fatty acids as oleanic acid, stearinic acid, also lecithin, all giving either the color of their free base or their dye salt.

By evaporation of the ethereal solution of the free methylene azure base, the red color changes to blue. This is believed to be due to the formation of the carbonic acid salt by absorption of carbonic acid from the air.

It is doubtful whether the free bases of the methylene violet, thionine, and dimethylthionine will form carbonates.

We know that the free bases of the thiazines are noted for their polymerization and may exist in two tautomere forms in analogy to other aniline dyes, for instance, parafuchsine. By tautomere we understand that a dye may exist in two different constitutions without changing its empirical formula, but that one form may change to the other, and it is not possible to isolate the molecules of one constitution from the other.

Two tautomere forms of the thiazine dyes can be demonstrated in a watery solution (a red and a blue modification). For instance, if we dilute a concentrated methylene violet solution with water, the violet color changes to pure blue. This shows that both modifications are present in a watery solution. From the fact that by dilution the blue modification only exists, we may conclude that the blue methylene violet, is a dissociation product of the red methylene violet. The blue methylene violet polymerized to the red modification, forms a larger molecule.

According to this theory, the ether or chloroform solution of the dyes contains the thiazine bases in a polymerized form, which will on evaporation dissociate in the blue modification through absorption from water. The blue color is therefore not necessarily due to the formation of a carbonic acid salt, but is only the dissociated form of the red modification, and which is stable only in ether or chloroform.[4]

That the red modification is the polymerized form can be clearly demonstrated in still another way. As already stated, the thiazine base, with the exception of methylene blue, can be precipitated with caustic alkalies, yielding a reddish brown precipitate. The precipitate is insoluble in strong alkali solution, and represents the polymerized form of the thiazine bases. This can be shown by dissolving the precipitate in water, giving a red violet color, but by weaker dilution it turns to pure blue. The red polymerized form dissociates in water into the blue form. The watery solutions of these bases are very unstable. They are easily polymerized and dissociable in contrast to their salts with inorganic acids.

This is demonstrated by shaking a watery solution of methylene azure base and a methylene azure chloride with ether. The free methylene azure base can easily be extracted, giving a reddish color (polymerized form). From the chloride no free base is extracted. The same is true of the above mentioned thiazine dyes.

As we have seen, rabies, poliomyelitis, and variola virus can be stained with azure carbonate, but cannot be stained with the chloride. I believed this was due to the greater dissociability of the carbonate than the more stable chloride, but the foregoing experiments with the free methylene azure base in the hydrogen atmosphere make the existence of a carbonate salt doubtful. The blue color of the watery solution is probably only the soluble dissociate form of the red polymerized base, and the staining of these viruses is principally with the methylene azure

[4]That the free polymerized methylene azure base can dissociate in a watery solution to the blue modification without absorption of carbonic acid can be shown by dissolving the free base in freshly boiled water saturated with hydrogen gas. The blue modification can therefore exist without salt formation. The same can be demonstrated with the other thiazine bases.

base. This theory was borne out by the staining of these viruses with the watery solution of the free bases of methylene violet and dimethylthionine,[5] while no results were obtained with the chlorides. In contrast to the common microorganisms, the protoplasmic substances of these viruses cannot anchor the dye salt, but only the free base. The metachromatic staining of some of the microorganisms suggests that the dye base is probably absorbed by a fatty substance. The solubility of the free thiazine bases in fat substances, as oleanic acid, neutral fats, makes this clear. The different color of the microorganisms may be explained by the presence of two tautomere forms of the thiazine bases, the red and blue modifications.

The real chemical nature of the protoplasmic substance cannot be determined, but it is likely of a peculiar lipoid protein nature.

The lipoid nature of these viruses may explain why they are filterable. The lipoid component gives the protoplasm great plasticity, also lessens the cohesion and allows passage through the smallest filter pores. That the quantity of the lipoid substance is not equal in all three viruses may account for their difference in filterability. Their lipoid character may account for their resistance to drying, freezing, and to glycerin; also, the microscopical invisibility of the viruses in a living condition may be explained by the high light refracting properties of the lipoid substances.

The application of this staining method may reveal the etiological cause of other unknown viruses of the filterable type, as scarlet fever, measles, typhus fever, fowl pest, etc.

The peculiar staining properties of these viruses distinguish them from other microorganisms and form a new group. Beside their filterability, they are characterized by their formation of specific cellular incision products, as the Guarnieri bodies in variola vaccine, Negri bodies in rabies, and similar bodies in poliomyelitis. We know that these inclusions are not the causative microorganisms, but only degeneration products of protoplasmic nuclear origin.

According to Prowazek's belief, and as my investigations have shown, these microorganisms are intraplasmic and intranuclear. The cell inclusions are no doubt pathological products produced by the action of the microorganisms.

The metabolic products formed by these viruses can act directly on the cellular structures, in contrast to that of the common pathogenic microorganisms which usually thrive in the cell free body fluids.

Of the common microorganisms, we know that only the lepra bacillus is intracellular, but this may be a phagocytic action of the cell and not a cell habitus of the lepra microorganisms. Further, we know that the common bacteria by intracellular parasitism in lower vertebrates never produce intracellular inclusion products. Another characteristic is that by transmission to other hosts they acquire different biological properties. We see that in the transmission of smallpox to cows, the virus is attenuated and is almost avirulent to man, and by inoculation produces only a localized pustule with no tendency to generalize the disease, but gives the individual a high grade immunity. The same is observed in rabies. The street virus loses its virulence to man and certain animals, after passage through the rabbit (fixed virus), and immunization with the fixed virus gives immunity against street virus infection. This may be true of poliomyelitis. The poliomyelitis virus transmitted to monkeys will probably lose its virulence to man. As far as I know, no infection has occurred to man through handling the highly virulent monkey poliomyelitis virus. An artificial immunity with attenuated poliomyelitis virus seems possible, but as yet it has not proved constant enough to justify its use on man.

The intracellular situation of the microorganisms explains the difficulty in obtaining the artificial culture. As yet their cultivation *in vitro ad indefinitum* is not accomplished.

We see that these microorganisms cannot be cultivated on the common culture media which contain certain protein split products (hemialbumose, peptones, amidoacids), with or without unchanged protein bodies (fresh blood serum or blood serum or blood plasma). This shows that the growth of these microorganisms depends on certain metabolic split products which are formed during the life of the cell. They are unable to split the large protein molecule, as they are circulating in the living body fluid. It is, therefore, not probable that this microorganism will ever grow in a cellular free organic fluid. It seems that the presence of living cells which produce certain protein split products are necessary for their growth.

I designate this group "azurephile or thiazineophile microorganisms" on account of their staining with methylene azure or more generally, with certain thiazine dyes.

[5]With methylene blue or thionine base, the viruses could not be stained. It is probable that the metbyl groups control the tinctorial affinity. It seems that the unmethylized (thionine) and the completely methylized thiazine bases (methylene blue) are acromatophile. Only the partially metbylized thiazine bases (methylene violet, metbylene azure, and dimethylthionine) can be anchored. Whether the toluidine blue base will stain the virus has yet to be tried.

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THE PATHOLOGY OF NEURALGIA.

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In discussing any aspect of a subject it is well to have a clear understanding as to what is indicated by the term used. Neuralgia is a word that has almost as many meanings as rheumatism or neurasthenia. Do we understand by it that we are dealing with a definite entity or is it merely a convenient method of covering up a lack of informa-

tion concerning the condition that gives rise to the symptom that stands out so preeminently?

Is there any underlying difference between neuralgia and neuritis, or is the division one that is of value from the clinical viewpoint only? To give a definition, one might refer to neuritis as a constant pain, and to neuralgia as a spasmodic one.

When we come to consider the pathological changes we shall discover that we cannot divide our findings into those that indicate neuritis and into those that point to neuralgia. There are in fact those changes only that are indicative of neuritis in its broadest significance, including not only the inflammatory, but the degenerative as well. In fact the more we advance in medicine the less common become the idiopathic and functional diseases. We find that definite primary causes can frequently be found if our investigations are sufficiently painstaking.

From a clinical standpoint, neuralgias can be classed according to the nerve involved, sciatica when the sciatic nerve is the site of trouble, tic douloureux when the fifth nerve is at fault. In either case one would probably be speaking with accuracy if he referred to the condition as a neuritis.

Although there may be as many forms of neuralgia as there are nerves, yet as the classical form, and likewise the most painful, is tic douloureux, it will be the variety referred to principally under the title of this paper. As we well know, the fifth nerve is made up of both sensory and motor portions, the former fibres constituting the greater part.

The question again arises as to whether or not we are dealing with a neuritis or a neuralgia. Is it a functional or an organic process? But as functional is a very comprehensive term, we do not get very far ahead, even if we make use of it for the purposes of classification.

According to some investigators, tic is a neurosis, to others it is a neuralgia, a distinction that seems to be without much difference. Others believe that it is a neuritis, and it would appear that this is the more logical belief, although we find that this class may be subdivided into those who hold that tic is peripheral in character, that it is primary within the Gasserian ganglion, or that the lesion may be a central one.

The microscopical examinations that have been made of Gasserian ganglia removed at operation, would indicate that the view of tic being a neuritis is on a firm pathological basis. As a result of such examinations Spiller is more than ever inclined to believe that neuralgia cannot be separated sharply from neuritis; and in some cases of so called chronic neuralgia, such as obstinate sciatica, we may be able by the microscope to detect evidences of chronic inflammation.

Putnam also states that, as a rule, neuritis is present in trifacial neuralgia, and probably exists far more often than we think. This seems exceedingly probable, for the dividing line between neuralgia and neuritis cannot be drawn sharply. He likewise is of the opinion that physicians have been more favorable to the view that in chronic forms of neuralgia at least, the pain is simply the expression of the inflammation of a nerve. Dana expresses the view that trifacial neuralgia is due to degenerative neuritis of the peripheral sensory neurones of the fifth nerve, depending upon or associated with obliterating arteritis.

When we consider the changes found, it would be of the greatest value if we could determine whether or not such alterations were primary or secondary. Do they appear in consequence of the long continued pain or are they the cause of the disturbance? Unfortunately that point cannot be satisfactorily determined, but some decidedly interesting points have been disclosed by comparing the pathological findings with the clinical course.

We do know that the Gasserian ganglion, whether or not primarily, does in the end become affected. But the lesions are, however, not sufficiently characteristic to consider them typical of a particular disease. Again we are forced to the opinion that neuralgia and neuritis cannot be definitely separated.

In an examination of seven Gasserian ganglia removed by Doctor Keen, Doctor Spiller found that, in a general way, the pathological changes were as follows:

1. The medullary substance of the nerve fibre within the ganglion and its branches is immensely swollen, atrophied, or entirely absent, depending upon the intensity of the disease.

2. The axis cylinders similarly are markedly degenerated or entirely destroyed.

3. In one case the cells of the ganglia were so degenerated or atrophied that there would be doubt whether we were dealing with ganglionic tissue were it not for the occasional nerve cells seen.

4. The vessels were very distinctly sclerotic. In one case the lumen was obliterated.

5. In one case there was a decided increase in the amount of connective tissue, enough to call the alteration a distinct sclerosis.

In these examinations, with perhaps two exceptions, the possibility of the changes in the ganglia being secondary, cannot be overlooked. In five of the cases portions of the peripheral nerves had been removed at previous operations. In one instance there had been as many as six operations on the peripheral branches before the ganglion itself was removed. In the two cases in which previous operations had not been resorted to, teeth had been pulled in the hope of alleviating the pain. In one of these cases the microscopical examination showed most distinct evidences of degeneration, as well as sclerosis of the small vessels. In the other instance some of the vessels were sclerotic, but there was little change in the nerve fibres. The smaller ganglion cells were abnormally abundant and in some places the medullary sheaths were somewhat swollen. However, in two other cases of tic reported by Lexer, there were found no histological abnormalities whatever, and no peripheral operations had preceded the ganglion extirpation in either instance.

From the fact that in some cases relief is obtained by peripheral operations, it seems quite possible that the trouble may have started at that point. Rose found in some of his specimens great alterations in the peripheral nerves in trifacial neuralgia The appearances were those of chronic neuritis, and were often more marked at the peripheral than at the central ends of the fibres. That the

pain eventually returns may be due to an ascending neuritis, the possibility of which, though often disputed, must be acknowledged. Another and possibly a more plausible explanation, is that the peripheral operation has merely destroyed the means of conduction, and that the pain returns when regeneration of the fibres has taken place. This would appear to be the explanation in a case reported by Weisenburg. This, however, was not one of true tic, but was due to a tumor involving by pressure the ninth and twelfth cranial nerves.

When an attempt is made to differentiate degeneration of the nerves from inflammation, a difficult task is undertaken, because degeneration may follow inflammation, and conversely inflammatory changes may follow upon degenerative ones. In true inflammatory neuritis the involved portion may appear to the naked eye as a pinkish, swollen, edematous area with foci of hemorrhage or suppuration. The change is an interstitial one, and microscopically there will be found an extensive round cell infiltration of the connective tissue. There will usually be degeneration of some of the fibres.

Such a simple condition, however, seldom exists, because in a short time degenerative, parenchymatous changes appear. When nerve involvement, call it neuralgia or neuritis, has continued for some time, the degenerative processes make their appearance. Microscopical examination will show broken up and disintegrated myelin sheaths, the fragments of which stain black with osmic acid. In later stages this fatty detritus may have been removed. In the early stage the axis cylinder may show no change, but as a rule they are swollen, irregular in outline, and stain feebly. Eventually they may be broken or completely disintegrated.

In the neurilemmal sheath there will be reactionary changes. The nuclei proliferate, some of the newly formed cells acting as phagocytes, or, becoming fibroblasts, lead to the formation of an excess of connective tissue. Others form nucleated strands of undifferentiated protoplasm into which the newly formed axis cylinders penetrate when regeneration sets in.

At the present time it would seem that the question of the pathology of neuralgia resolves itself into the histological changes that are found in the nerves and which we understand as indicating neuritis. The difficulty that arises may be somewhat obviated if we do not restrict the term neuritis to those changes alone that are purely inflammatory. As has been stated already, it is next to impossible for such alterations to be present without indications of some degenerative conditions of the parenchymatous portions of the nerve fibres.

HOW MUCH OF EUGENICS IS SCIENTIFIC?*

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Eugenics is the study of the agencies under social control by which future generations may be improved either physically or mentally. It is a question of immense biological complexity, and cannot be settled by a verbal disquisition. It requires an intensive study of heredity in man, of differential marriage rates, differential fertility, selective death rates, immigration and emigration, and of the correlation of all these with the social and antisocial qualities of the several reproductive groups in the community. According to Karl Pearson (1), the advancement of national eugenics depends mainly upon heredity, and while he will not dogmatically assert that environment matters not at all, he assigns to environment an influence not one fifth that of heredity, and quite possibly not one tenth of it. In other words, he holds that it is essentially the man who makes his environment, and not the environment which makes the man. He compares the environment to the grindstone and oilstone upon which a workman sharpens his chisel, and says that they are useless to make an effective tool when there is a flaw in the steel. This view accords to heredity an importance which has been made the basis of much restrictive legislation, legislation which rests upon a hypothetical and sentimental foundation, rather than upon the proved facts of biology.

While it is indisputable that heredity may be responsible for many physical defects, for a vulnerable nervous system, and for the direct transmission of certain blood diseases, it has never been proved that acquired characters, such as criminality, alcoholism, and sexual immorality, are transmissible by hereditary influence or are inherent qualities of the germ cell (2, 7). Those who uphold the theory of the primacy of heredity rest their case upon the occurrence of insanity in families, or upon the occurrence of such abnormal physical conditions as congenital deafness or color blindness or supernumerary digits or brachydactyly, in which the fingers have one joint less than normal, or congenital cataract or night blindness, in which the affected individual cannot see in dull light (3). But all these cases come under the heading of inherited defect of the somatic or body cells of the parent, and in no wise depend upon the qualities of the germ cells. The most careful analysis of the statistics of the biometricians or the most elaborate deductions of the Mendelians serve but to show that the value of the intensity of inheritance relates to stature, eye color, physical ability, or tendency to congenital disease. Even the common belief that the children of alcoholic parents are deficient in health, intelligence, or physical development has recently been upset by the studies of some 1,400 children in the schools of Edinburgh (4). That brilliantly successful advertising genius, Mr. George Bernard Shaw, in his usual luminous fashion, sums up the situation in the epigram: "The bubble of heredity has been pricked" (5). We cannot compare a human soul to a plant, the future life of which is admittedly determined in advance. A human being may bring into the world with him the future shape of his body, but he does not bring in his mind, his character, his free will, his entire disposition. We still have the comfort of knowing that all these can be moulded by education, and especially by moral education, the biometricians to the contrary notwithstanding. Yet, Sir Francis Galton, himself secure in the se-

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rene contemplation of an unblemished intellectual hereditary tree, would have us believe that culture, gentleness, fearlessness, truth seeking, and intelligence have been in large measure weeded out from the human stock, partly by the rule of celibacy, partly by persecution, for both of which he accuses the Church of the Middle Ages of being responsible. For, he says, whenever a man or woman was possessed of a gentle nature that fitted him or her to deeds of charity, to meditation, to literature, or to art, they had no refuge elsewhere than in the bosom of the Church, which then exacted celibacy from them, and so left us none but brutes for forefathers. Galton also asserts that not content with that, the Church, by means of persecutions, brought thousands of the foremost thinkers and men of political aptitudes to the scaffold or imprisoned them during a large part of their manhood or drove them as emigrants into other lands (6). And having unburdened himself of these calm judicial utterances, the placid Sir Francis goes on to say that in consequence of this inbred imperfection of our natures, there is now no health in us.

Think, O gentle reader, what you might have been if your ancestry had not been so brutalized and demoralized. Such is one of the absurd lengths to which the study of plant metaphor and of biometrics carries its disciples. Biometrical philosophy, as exemplified by Professor Karl Pearson, asks: "What reason is there for demanding a special evolution for man's mental and moral side?" No reason, if we regard man as analogous to a plant, or even to a "horse, a greyhound, or a water flea," or if we can settle the question of his evolution by the computation of tables of statistics. With these biometrical gentlemen, heredity is everything, environment and education futile, except with selected stock. While acknowledging that the Fagins of London can train criminals and thieves, they deny that philanthropists can evolve useful citizens from unpromising material. Yet of the castaways in Doctor Barnardo's institution, ninety-eight per cent. became respectable citizens, while a similar result (ninety-seven per cent.) has been obtained in the city of Glasgow (5). This is one of those nasty little facts which give the death blow to the most beautiful induction of the biometrical philosophers. Even those who deny to man the possession of an immortal soul, are compelled to admit that Nature has given him a plastic brain, and that mental and moral energy, unlike physical energy, obeys no laws of "conservation," but may go on increasing and complicating indefinitely, and that the fate of the child, so far as his mind is concerned, depends not on heredity, but on environment and education. The startling epigram of Mr. Bernard Shaw that "the vilest abortionist is he who attempts to mould a child's character," like many another of his famous (or infamous) sayings, was probably delivered with the well calculated design of drawing attention to himself and to his works. Mr. Shaw is but a disciple of an era which is rapidly passing away, an era of destructive criticism, and of mental and moral obliquity of vision. Those who can see more clearly have perceived, with the dawn of the twentieth century, a clearer vision of paths of advance, which heralds the coming of a new day, a day which is bringing us, from a sociological standpoint, nearer to the Kingdom of God.

The idea of the regeneration of the race does not need to strike that leaden note of despair—the hopelessness of heredity, but rather the ringing tones of a new and certain hope in the reunion of religion with moral education.

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42 EAST TWENTY-NINTH STREET.

ATYPICAL CHILDREN.*

The Etiological Factors in Their Production.

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Statistical records and histories of the truly defective afford us valuable data as to the etiological factors underlying the direct and indirect causes of this class of unfortunates. Reviewing a large number of histories in private practice and in the course of many years of clinical experience, agreeing with practically all other observers, I find that heredity plays an unquestioned rôle; there is the oft emphasized history, either in the direct, or collateral lines, of syphilis, alcohol, one of the many forms of insanity, epilepsy, consanguineous marriage, etc. Indeed, it can no longer be a question of dispute that in those instances of marked mental deficiencies showing themselves in the very early years of life, or later in the juvenile period, on one or both sides the prenatal influence is the dominating factor. While we all admit the importance of heredity, especially in the organic nervous diseases, yet in some cases the influence of environment and education is far greater in the strengthening of the forces of the child than is the case in those of marked physical defect, in which we may also expect to find organic changes in the ideational centres of activity.

The value of studying the needs of so called atypical children will become evident when we consider that among them are found some of the best minds—those that give to the world intellectual, artistic, and moral qualities. Exalted intellectual power in the arts has time and again been found in those atypical beings who have begun life under the cloud of early instability and deviation. These children comprise the great mass of the "misunderstood," and many a life has been thus begun and, through ignorance of its needs, doomed to pitiless drudgery in an atmosphere dark and distasteful. The child loses much; mankind may lose more. These children are often born of neurotic stock and, although endowed with special qualities, are usually deficient in certain practical—what might be said to be elementary features. There is in some a lack of emotional stability; a want of proper self control; perversities in the exercise of the control

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of the will. Some are not just ordinary children: often they are extraordinary ones. Rarely are they well poised. Sometimes music, again dramatic power, active imagination—often, however, not of the true constructive type—marked mathematical faculties, or the reverse, stand preeminently forth in a mind lacking in the coordinating elementary mental processes. Allow these children to develop in the forced environment of an uncongenial, unsympathetic atmosphere, and the very sweetness from the flower that may blossom in its maturity will turn to acrid vapor in barren soil. To abandon metaphor, we may say that instead of good, useful members of society, these children, if improperly educated and brought up in unsuitable environment, often bring to development the criminal traits that eventually cost themselves and society the price that ignorance and neglect have so often imposed upon us. In adult life, these children find themselves at variance, out of tune with their surroundings. They lose the incentive of life work; their mental attitude is at war with the conditions of life imposed upon them. Eventually, there is forced out another, an incomplete, a weaker personality; a composite perhaps of elements partly atavistic. That child has been robbed of his best inheritance by injudicious education and environment. In the soil of just such conditions lies the seed that may lead to that sepulchre of early mental life—dementia præcox.

The redemption of these young human beings, born with abnormal potential forces within an unstable brain; housing, as it were, a mind not poised for adaptation to the demands of routine work, is of the highest order of pedagogic interest. It aims at the deliverance of those who in literature and art may finally stand among the foremost. The genius of the world belongs to this unstable type. They need special care and attention during the delicate years of developmental life. There is not so much of interest in that large class of truly defective, the best of whom can only be raised to a mediocre degree of social activity and for whom the State has liberally provided.

The influence of the experiences of the early years of life upon the development of the various forms of neuroses later, although long conceded, has been emphasized within the last decade by the methods of psychoanalysis. This form of investigation and cure was originally introduced by Freud and has in later years been modified by Jung and others. Freud announced that the sudden so called "nervous breakdowns" of neurotic individuals, especially those who showed instability in their early years of life, were due to shocks, or sexual experiences in early child life; and that these experiences, always occurring in the highly organized, neurotic child, were suppressed and forced into the subconscious realm of mental activity and for the time forgotten. Lingering in that undermental life, they were ready, years later, to form the nucleus around which functional neuroses might at any time burst forth under unusual strain in the life of the individual.

Later investigation shows that these experiences of child life need not be of a sexual order; but that any form of mental injury, or suppressed disagreeable experience attended by strong emotional reaction, may suddenly emerge and be the basis for severe psychic disturbances. In the atypical, or exceptional child, we see a parallel in that borderland of psychic uncertainty wavering between the normal and abnormal and represented by cases in adult life of the various obsessions, *folie de doute*, psychasthenia, etc. We are familiar with that vast multitude hovering between limitation of the normal and the borderland of recognizable mental alienation. In just these neurotic individuals, the mental imagery of juvenile life occurs and is particularly prone to take on a sexual complex, as has been shown in morbidly affectionate and erotic children.

This emotion is likely to associate itself in the case of male children with the mother, and with the father in female. Sublimation, or turning the energy of sexual impulses into channels of productive activity, must be begun early in the child's life. No matter whether or not we consider the process of inversion—that is to say, the sexual desire of one for its own sex—entirely of a congenital nature and hence, in a sense, fatalistic; or whether we assume that it is purely acquired; or whether we accept the possibility of educational influences upon its trend; we must be alive to the necessity of carefully observing evidences of the tendency to inversion in children. I personally believe that there are bisexual elements in all, and that the development of the invert is frequently due to some one, or perhaps repeated sexual experience, such as seduction, early masturbatory indulgences among children of the same sex, etc. Sublimation develops the will of the child, especially in overcoming obstacles. The necessity for this is emphasized by our knowledge of the etiology of what is psychologically known as regression, a term meaning the turning back of the energy of the individual to the primitive, the juvenile habits of thought and action; thus at a critical moment of adult life, the early habits become of immense importance in their bearing upon the form and depth of the neurosis. It occurs in the later life of the neurotic when, confronted by what appears to be an unsurmountable obstacle, there is a renunciation; effort is abandoned, and the psychic energy becomes anchored to its juvenile fantasies.

Imagery, which plays such a rôle among the children of unstable psychic nervous organization, should be discouraged and an effort made to turn their interests into the materially productive. The tendency of imaginative children to become self centered, and thence have their perceptions aroused by autoerogenous stimuli of a sexual nature, should be combated. If allowed automatic repetition, complexes form, the perversities adhere to the subconscious and, in time of regression in later life, become active fantasies around which the neurosis develops. If the energy—that is the ambitions—becomes thus anchored, this anchorage must be lifted, and the energy will develop and ripen with maturing years and properly adapt itself to environment.

The morbid affection for the parent of these children, sometimes with sexual taint, at other times of a more esthetic, higher emotional nature,

must be carefully guarded against. The parents must be instructed as to the danger of nurturing it, for frequently it finds a ready response, this manifestation not being understood as the symptom of a morbid fancy. This does not occur among normal children, for, associated with these desires, in the neurotic, as a rule, are other features of affective instability. These children are frequently day dreamers; live a fanciful existence, and their psychology is sometimes identified with later serious psychic aberration. Their energy, often of a very unstable but impulsive character, should be directed toward its discharge in the practical and material things of life, and their daily work carefully supervised so that it may gradually assume the nature of the average individual of corresponding years.

The atypical neurotic type must be distinguished from the more self controlled child, the one who has himself well in hand; has especially vivid imagination, but of a highly constructive type, with a mild—not constant—tendency to day dreaming, a fondness for solitude and reflection; extremely sensitive; apparently timid. This child requires great delicacy in handling. He is liable, under unsuitable environment, and especially under suppression of his innate qualities, to develop into the truly neurotic.

It has always seemed to me that our routine pedagogical schemes were entirely unsuited to the education of the atypical child. In practical school work, he is found to be frequently deficient, but usually shows some special aptitude. I believe that in many instances this aptitude should be further developed, special attention being given to its fostering. It is in some instances absolutely impossible to educate these children according to the curriculum of our regular school system; an effort to do so often places them in the category of the seriously deficient, rapidly depleting their energy in fruitless effort, and bringing about an internal conflict due to their own rebellion against what is to them most difficult and distasteful. The brilliancy, along certain lines, of some of these children warrants devoting more time to their special qualifications.

The suggestibility of these neurotic, high strung children of unstable affective organization invites regression in later life and demands great care in not allowing their emotions to become unduly awakened. Let us not forget that the basic radical of the true juvenile psychosis is an internal strife —an inadequacy in the reasoning faculties and judgment: that of psychasthenia, extreme emotionalism: of the neurasthenic, rapid fatigue. I have found by psychoanalysis that later in life morbid fears not infrequently find their inception in sad experiences associated with a high degree of emotion. For instance, a horror of death can often be traced to the impressions in childhood of the funeral ceremony, the house of mourning, the memory of all the highly emotional features of that period of stress and suffering. This has frequently helped to aggravate a neurosis in sensitive children. I have been able to bring the emotional complex out of the subconscious by stimulating the olfactory centre; that is, by allowing the patient, while in the hypnoidal state, to smell a tuberose, a flower so common at funerals. The morbid horror of being buried alive; the night terrors frequently associated with this apprehension, can often be traced to the early experiences and the unnatural reality given to the appearance of the dead. The fear of the dark, sometimes hereditary, of some of these children, should not be harshly disregarded. Gentle persuasion and a large measure of intelligence will often prevent a development of a fear neurosis later in life.

It must be remembered that the hypnoidal state is not a state of hypnosis; the patient is entirely conscious, though in a condition of mental passivity.

Adequate psychological pedagogy, adapted to the individual, can be applied as are orthopedics and gymnastics to physical inefficiencies. Psychological clinics are needed, with social workers; their function would be both scientific and practical, devoted to restoring the abnormal to as near the normal as possible for that particular child. The clinic would study and alleviate mental and moral deflections and give pedagogical advice and could be made a great philanthropic institution, as trained medical psychopedagogues would often detect the mind of the predement or of the paranoiac. Psychoanalytical studies of to-day are revealing the intimate relationship between the mental operations in various forms of functional psychoneuroses. We observe that within wide limits there can be grouped together a variety of symptoms revealing close relationship in juvenile life, eventually developing into serious forms of mental aberration; or, modified by adaptive psychological educational methods, pass over into normal activity.

The years of puberty particularly and, in a lesser degree, of adolescence are fraught with great danger to psychic life. These are the years when medicopedagogic advice can be of most service Imagination, at the time of puberty, becomes heightened in neurotic children. Those who have ever been introspective become more so, and the mental play becomes more active. Illusion, the result of day dreaming, becomes varied and unrestrained. This habit of imagery becomes more insistent and, as in the psychology of dementia præcox, the horizon of productive mental activity more circumscribed. The child may delight in the illusory life, made up of complexes that by repetition take form and root; later, perhaps, to become the nucleus of true paranoid entities.

The later psychology of Bleuler, Jung, and others has brought the morbid psychological features of the true juvenile phychoses into close relationship etiologically with the atypical features of early child life. The exaggerations of the normal psychological perceptive and apperceptive processes, or the persistence of those that should be modified or assimilated by experience and development of the intellect, bring us close to the question of how far psychological pedagogy can save the child. A careful examination along scientific lines is necessary to differentiate the needs of a particular case. I emphasize psychological—I should rather say medicopedagogical—psychoanalytical would be even more accurate. It is not sufficient to examine these cases of atypical children from the neurological

and physical standpoint alone; we may find practically nothing that indicates deviation from the normal. I do not by any means concede that in all cases of atypical children, careful examination—either of neurological or physical character—reveals some evidence of the mental astigmatism. Of course I believe that mannerisms, certain slight but suggestive peculiarities of gait or posture, the manner of response, a slight so called habit spasm, perhaps a tic, if present, at once arouse our suspicion and direct attention to the neurotic element. To the trained observer, there is an indefinable something that gives him the impression that a neurotic soil lies within the psychic region of certain children. However, where there is nothing to be determined by the most careful physical and neurological examination, psychological methods of examination often reveal a deep seated defect in the psychic makeup of the child. There seems to be, in a figurative sense, a mental "color blindness" limited to some special feature of psychic activity. In some children, for example, there appears a striking disparity between judgment and memory; or again there is manifest a lack of proper emotional response; there may be a want of imaginative power; or, as is more often the case, an over-imaginative tendency as a result of unmodified, or uncontrolled projected mental visualization, or unreal mental representation, soon crowding out the reality and developing unfruitful imagery. There follows lack or loss of concentrative power. Out of this state of perverted mental activity there may gradually emerge the element from which is built up that form of mental deterioration, often ending in final decay, known as precocious dementia. The vast importance of immediately correcting these early psychic perversions becomes manifest. The histories of a large number of abnormal children—subnormal, or atypical, as we may choose to classify them—are replete with illustrations.

There is a class of children which has been described by various writers, some cases of which have doubtless come under your observation, which are of psychopathic constitution, and, as a rule, have a hereditary taint. Intellectually, they may be up to the average, although there is often an intense emotionalism. They suffer from seizures of an epileptoid nature; the earmarks, however, of the true epilepsy are wanting. There is a psychic deterioration; no rapid mental decay such as is common to epileptics from the thirteenth to the twentieth year. The seizures are episodical, often brought on by long mental strain, attended with emotional excitement. The attacks are rarely of the *grand mal* order and usually of the nature of psychic equivalents. There may be unconsciousness, vertigo, periods of hallucinatory confusion, so called *Dämmerzustände*. These patients not infrequently show moral obliquity and unsettled mental states. The attacks occur usually in the first decade. They may occur just once, or may recur for years, without, however, psychic deterioration. Unless the proper adjustment is made in their environment and education, their later life shows the various deflections of the psychasthenic.

Hall has well expressed the situation when he says: "There are two missing links indispensable to a full acquaintance with the many forms of precocious mental decay; first and chiefly, knowledge of the actual changes during the stage of puberty, and later adolescence, which go on within the limits of sanity. This age has often been characterized as that of mental and moral inebriation and of psychic madness, and from many studies of its phenomena, I am convinced that nearly all of its symptoms can be paralleled in the inner and outer life of youth who do not lapse toward the terminal imbecility, but develop to sane and efficient maturity."

In an interesting article on what he speaks of as "predementia præcox," Jeliffe has set forth the need of pedagogic prophylaxis, as he expresses it, for the prevention of the later development into real psychoses of symptoms that present themselves in pregnant form in juvenile life; symptoms suggestive of later serious psychic manifestations.

Writers of such ability as Jung, Ricklin, and Bleuler show clearly from their studies that many of the symptoms of dementia præcox are really evolved perversion of the activity of normal juvenile life. Indeed, if we follow out the bizarre and kaleidoscopic variations of the psychic life of neurotic, and sometimes even of normal children, we can see the parallelism in the psychological phenomena between that within the borderland of the normal mind and those juvenile forms of alienation.

In any case under observation, a careful history, ancestral and personal, is necessary from the first; a painstaking and, if essential, repeated observations of the child; psychoanalytical methods sometimes to bring out the nucleus of the psychological effect. Personally, I find the Binet tests of general value only; they are doubtless useful in schools and institutions to determine the psychological error. However, I find other methods necessary. The Binet tests do not enable me to reach the child's true emotional sphere, nor can I reach conclusions as to the psychic equivalent between judgment, memory, and emotion. While it is true that the moral development of a child is largely a matter of education, some cases seem lacking in the general groundwork, the inherent basic principles necessary for the normal development of the moral side of man. These children are really moral imbeciles. With them, wrong doing, sometimes committed with what seems diabolical viciousness, is analogous in its initiative to the impulses of the kleptomaniac and of the pyromaniac. In this class, though there be intellectual efficiency, the influence of environment and teaching is small.

For example, I have a case; a boy of eight years, precocious for his ability in most appropriate extemporaneous speaking. He has an engaging manner, an attractive personality, and is physically well developed. He is, however, willful, being difficult to manage because of this condition and also because of his desire to play only in the imaginative sphere. He does not interest himself with material things and does not enjoy the games and the usual interests of the average boy of his years. He absolutely cannot learn to spell correctly; on examination, I found that he could not associate the sound of the letter and syllable, and the defect amounted to a psychological obliquity. He was profoundly lacking in concentrative power except when the

distractions of visual impressions were removed. Peripheral stimuli interfered with his apperceptive powers. This child had gone to school for two years laboring under the severe strain incident to his psychic deviation. Appropriate methods for adaptation by a qualified teacher have brought improvement.

I have another case which is likewise illustrative. The latter demonstrates the oft observed fact that in some children, in whom there is partial want of motor adaptation, usually of organic origin and resulting in abnormal movements of the body with or without parallel want of proper speech coordination, we see a corresponding psychic incoordination resulting in impulsive and imperative concepts disturbing mental equilibrium. I could give many illustrative histories if time permitted.

It is surprising to find how frequently we meet with true paranoid psychological elements in neurotic children. A careful analysis of their psychology reveals much that needs active corrective measures. A large percentage of mental cases show indications in early life. Even that chronic form of congenital disease, doubtless an original psychosis, paranoia—that is, chronic, delusional insanity—proclaims its coming in the early life of the individual. There are eccentricity and peculiar deviation from the standard of conduct which are characteristic of the future mental delusions. Even here, early training, the cultivation of self restraint in a properly adapted environment, will develop such qualities as will enable the patient to exercise inhibitory impulses holding sway over morbid ideation. The atypical child is just the one in whom, if hereditary predisposition prevails, we see the making of the different forms of mental disease. In this mental subsoil lies the nutriment for the development of true mental aberration in later life. From this material the great criminal class, the cranks, the harmless, and the homicidal often take origin. When we consider that over a quarter of a million of our population are insane and that it seems that the number is increasing; that our case histories of the various forms of atypical, exceptional, and abnormal children unequivocally show alcoholism, syphilis, epilepsy, and various forms of insanity as an ancestral taint; when we further consider that a very large percentage of the mental aberrations of later life signal their approach by mental deflection, or anomalies in early life—we must awaken to the need of a greater activity along lines of prophylaxis.

In spite of the fact that I hold that heredity, both in physical and in mental disease, is a powerful factor—man probably does not enter the world with an unalterable fate of tuberculosis, or of mental deficiencies; but this tendency lies within him. Alcoholism, syphilis, tuberculosis, epilepsy, etc., may appear in our progeny as a most varied group of physical and mental stigmata; psychopathic tendencies, present in one's ancestral strain, may descend upon the offspring. Unsuccessful have been the attempts to reduce to mathematical accuracy direct and indirect heritage. Mendel's law can be applied only in a restricted way to the human race, although it has reached a remarkable degree of accuracy in the lower animals. Nevertheless we are gradually getting nearer to some of the regularities of transmission in heredity.

I believe that psychoanalysis and the Mendelian law of heredity are the most important achievements of science within recent years. Psychoanalysis gives us a method for the study of subconscious activity, a phase of mental operation that exerts a tremendous influence upon the conscious activity of the individual. Psychoanalysis and its methods of reeducation for the complex, unstable mind show the remarkable influence of subconscious activity. In evolution the subconscious mind antedates the objective—the truly conscious, or organic mind of man—by eons of time. The subjective mind in animals seems to be identical in its operation to the subconscious mind of man. It is transmitted from one to another in both animals and in man, and it would seem that many of the obscure problems of inheritance are to be accounted for by this means of transmission. In man, superimposed upon the intuition, induction, and emotions of the subconscious, is reason.

As has been said: "Knowledge is acquired first as an inheritance and secondly by education, or training of our conscious mind which exerts an influence over our subconscious mind and inherited powers." I would emphasize the great importance of mental material accompanied by strong emotional complex which has been acquired and relegated to the subconscious in early life. Psychoanalysis has shown us how strong is the working of the subconscious in its influence upon the development of character and deportment.

Unfortunately, as our methods improve for the betterment of those afflicted with nervous diseases, as well as with other hereditary diseases, such as tuberculosis, etc., so, too, the total hereditary influence is increased, since the afflicted ones survive longer and in larger numbers. "The vicious seed," as Dr. Charles Dennison, speaking of tuberculosis, has so ably said, "is not destroyed, but preserved to be again mixed with the good." The lay conscience must be awakened by the dissemination of knowledge on certain subjects. Particularly, the young man must know what syphilis means; how easily it is acquired; how frightful are its results. He must realize that its consequences are delayed sometimes beyond one or more generations.

I have no sympathy with the man who says syphilis is curable. No one knows whether in any particular case a cure is, or is not effected. Blood examinations, treatment by the newly discovered salvarsan, etc., do not warrant us in saying whether or not the disease is eradicated. Case histories, carefully taken, will show that this scourge is at the seat, sometimes very remotely, of the various disorders that affect the human brain and mind. We who have carefully studied ancestral and personal histories in a very large number of cases of defectives in and out of institutions, find syphilis a very prominent factor in etiology. Young people and parents must look forward to the results of a marriage in which, on one or both sides, there is direct or indirect mental derangement, syphilis, or alcoholic history. The contracting parties must feel that each is sealing the fate, by reason of the inexorable laws of heredity, of unborn offspring.

Of the utmost importance to a human being is the selection of his ancestry. This is delegated to his parents, and if they fail in observing natural laws that in a measure give them option in the matter, they are responsible for the result.

As to consanguinity, it seems that the character of the stock is the important factor. The presence of neuropathic tendencies in one or both parents, especially if there is similarity in the character of the neurosis, means almost invariably neurosis in the offspring in definite measure. Even a consanguineous marriage between those of good stock results as a rule in high class offspring. But when neurosis is introduced, the progeny suffers far more than in indifferent mating. There is in this a logical suggestion of high prophylactic value.

I do not agree with the learned New York jurist, Judge Foster, who asserts that sterilization of the criminal—he might better have said the unfit—is the cure for crime. In my opinion, you must go far back of the individual who is already afflicted.

Individual conscience must awaken, and public sentiment crystallize so that general laws of mental hygiene will be enacted and carried out under the supervision of competent scientists, and then we may eventually hope to be relieved of the awful burden of caring for the mental and physical anomalies.

34 West Eighty-seventh Street.

HEMORRHOID OPERATIONS.

A Local Anesthesia Technic.

By Leigh Watson, M. D.,
Oklahoma City, Okla.

I am describing a case of internal varicose hemorrhoids of ten years' duration. There is an external connective tissue pile, Tuttle's skin tab, on the left side. The patient is a printer, thirty years of age. The hemorrhoids frequently protrude and the patient is often annoyed by bleeding and tenesmus. The patient is lying on his left side in the Sims position. The internal hemorrhoids are above the sphincteric ring and are not visible (Fig. 1).

A small pledget of cotton saturated with a one fifth per cent. cocaine solution is introduced into the anus as the patient strains, as he relaxes the pledget is drawn up within the sphincteric ring.

Fig. 1.—Hemorrhoids before local anesthesia.

The local applications are repeated with pledgets of increasing size, until the mucosa is completely anesthetized and the sphincter sufficiently relaxed to admit the index finger without pain.

The needle is now introduced through the anesthetized mucosa and the mucocutaneous margin is carefully infiltrated with a one tenth per cent. cocaine solution. The needle should be very superficial and always in sight beneath the epidermis. The infiltration is made into the deep layers of the dermis, and not under the skin. After each injection the needle is reinserted well within the anesthetized area.

The skin infiltration is now complete, a series of small tense wheals encircling the margin of the anus. This is all that is required for external hemorrhoids when it is not necessary to dilate the sphincter. Note the small amount of infiltration necessary when it is properly placed in the deep layers of the dermis. Massive infiltration distorts or obliterates the hemorrhoids and is a frequent cause of failure when physicians neglect to remove all the pile tumors when using local anesthesia (Fig. 2).

Fig. 2.—Showing complete cocaine infiltration; a very small amount of solution is required if it is properly placed in the deep layers of the dermis.

The index finger of the left hand is now introduced into the anus and the sphincter muscle is located. With this finger as a guide the sphincter muscle is cocainized. From six to eight punctures are made around the circumference of the anus at equidistant points, each time fifteen to thirty minims of the one tenth per cent. cocaine solution is injected directly into the sphincter muscle. This step is difficult and painful unless the mucosa has been anesthetized and the muscle partially relaxed by means of the cocaine pledgets. The sphincter is now painlessly and completely relaxed by digital dilatation. Only a moderate degree of dilatation is necessary. Extreme divulsion, as practised by some operators, is not only unnecessary, but the traumatism causes the dull aching pain that so often follows these operations.

A remarkable degree of dilatation is possible with local anesthesia. The sphincter must be well dilated before any operative procedure is attempted, so that no pile tumors will be overlooked, as sometimes happens when the sphincter is rigid and re-

sisting, even under general anesthesia. The internal hemorrhoids are easily everted after the sphincter is completely relaxed. There is no chance of overlooking the smallest pile tumor (Fig. 3).

Fig. 3.—Showing ease of eversion of internal hemorrhoids after complete relaxation of the sphincter.

The anesthesia usually lasts from one to two hours, depending upon the thoroughness of the infiltration and the tenseness of the skin wheals. For abolishing pain after operation a one per cent. urea and quinine solution may be injected into the tissues at the base of each hemorrhoid just before it is removed. This nerve block persists for five to seven days: by the time it disappears the tissues have healed.

611-613 Colcord Building.

IMPROVEMENTS IN THE SPECULUM.

Two Simple Modifications, of Value to the General Practitioner.

By P. Z. Hebert, M. D.,
New York.

There is no doubt that operations on the female genital organs have often been performed when a well directed course of treatment, either local or general or both, would have saved the patient from mutilation. Many times, in cases of chronic pelvic inflammation after tampons of glycerin, boroglyceride, boric acid, ichthyol, etc., had failed, I have felt that applications of iodine, for example, would have given better results, if these could have been made with more precision than can generally be attained with an ordinary speculum. The cervix uteri often comes in the way and receives most of the application, which should go to the region of the broad ligament or to the Fallopian tube or ovary or to Douglas's pouch, as the case may be.

With the object, therefore, of improving our methods of applying iodine in such cases, I have devised a speculum made of plain aluminum tubing cut to length. At the internal end of the tube length I made a depression on one side of the tube (Fig. 1), which would receive the cervix uteri, so as to press it aside out of the way, leaving a space in a state of tension in the roof of the vagina about one half to three quarters of an inch wide, which could be exposed all around the cervix by sweeping the speculum from one broad ligament through Douglas's pouch round to the other broad ligament. A shallow indentation in the end of the speculum will permit the broad ligament to arch over it when in that position. This exposed tense space would enable the iodine to penetrate and dry up and to be concentrated by several successive applications while the speculum is in position. In general, it is advisable to avoid applying iodine directly in front of the os uteri, as this is apt to produce dysuria.

Fig. 2.—Same as Fig. 1, but of different length and thickness.

Fig. 3.—Hebert's speculum for the treatment of warty growths; the latter are made to protrude through the holes and are readily snipped off.

I also devised a perforated speculum (Fig. 3), intended for excising papillomata or warts inside, or at the entrance of the vagina. These excrescences are made to protrude through one of the perforations, when they can be snipped off their base with little or no difficulty.

Any ingenious mechanic can make these two forms of speculum with but little difficulty.

331 West Fifty-eighth Street.

Fig. 1.—Hebert's speculum for the application of tincture of iodine over the broad ligament and about the cervix uteri; showing also the glass obturator.

EXERCISE AND DIET IN RELATION TO GROWTH.*

By Roger H. Dennett, M. D.,
New York.

In considering these two important elements in the growth of the child, exercise and diet, it would perhaps seem more appropriate that the diet should come first, because I believe that the average healthy child, if left unhampered, will get the proper amount and kind of exercise. On the other hand, the diet needs constant supervision and the child's inclinations in eating are far less apt to be right. I

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remember receiving a letter from a physician's wife who had read one of my articles upon diet in childhood. She wrote that she disagreed with me, for she had two healthy children who had always eaten whatever they chose and whenever they liked. As she expressed it, she turned them loose out of doors, and when they got hungry they came in and ate whatever their desires dictated. I could not help thinking that, unless these children were of an entirely different variety from those I have known, they must have been sick most of the time. But they had always enjoyed excellent health, probably because their exercise in the open country was strenuous enough to work off any ill effects of an improper diet. We are facing a different problem in a large city, where this active outdoor life from early morning until late at night is impossible.

We do not always seem to realize what an artificial life we are leading, and it is only because we have gradually become accustomed to such an artificial life that our children survive at all. It is perfectly astonishing to see in the hospital clinic great, strong, strapping, robust mothers bring to us such puny, sickly, little babies. It certainly gives us a very slight regard for heredity in comparison to environment. The parents have been brought up in the country and have come to the great city to bring into the world sickly infants, who serve only to fill our clinics and hospitals, and increase our death rate. Many of these children are eating the same food that sustained their parents, and nourished them well in the old country. Now, this difference between parent and child is not all due to diet, because fresh air and sunshine have a great deal to do with it, but the diet with the change of environment is responsible for the greater part of such a condition of affairs. In their own country the diet seems to suffice, surrounded as they are by ideal conditions in other ways, but here it is absolutely insufficient and works havoc with them. The Italians who have practically no protein in their food, that is milk, meat, and eggs, and the lower class of Russian Jews who do not even know what the word vegetable means, and the more Americanized foreigners whose children eat ice cream cones, soda water, cakes, chocolate, and candy are all examples of wrong feeding. Many children of the so called better class do not differ so very much from these foreigners.

It goes without saying that the growth of the child is almost entirely dependent upon the diet. Every physician who treats many children would tell you that more than half of the patients he sees, under six years of age, are brought to him for various conditions which are caused by errors in diet. This is not by any means due entirely to the lack of care in the selection of the proper diet for children, even among the hospital cases. Usually the mother's first thought when she sees her child failing in health or becoming poorly nourised, is to change the diet in one way or another according to her lights. It is her lack of knowledge that causes her to fail, rather than the want of care and thought. In my experience this is true both in private practice and hospital work. There are careless parents and there are lazy parents, but these are not in the majority.

Perhaps the first of the various details of children's diet to consider, would be the time at which the food is eaten. One of the most striking things in going around in the tenement houses, is the lack of any regular meal time. Often the family never pretends to sit down together to eat, as the well regulated family of the better class does. When the inclination seizes them, perhaps one or two members of the family at a time, take whatever food is provided. If meat, soup, or something of the sort is to be the main meal of the day, it is cooked whenever it is most convenient and eaten when the children come in from the street or from school. In our history blanks at the hospital, we have a space devoted to the diet throughout the day, which includes breakfast, dinner, supper, and between meals. The time of each meal is stated that we may determine the actual food taken by our little patients from morning until night. It is positively funny to see the amazement with which the average tenement mother looks at any such schedule. This is entirely wrong, but just as harmful a state of affairs is seen among the better class, owing to an entirely different cause. Here the child has regular meal times and sits down with the family, but he lunches all day long, often because the mother thinks he needs the food. The less he eats at meal times, the more anxious is the mother to have him lunch because his appetite is so poor. Many times in the course of the year, I am told that a child eats so little at meal times, that the mother has thought it necessary to give him something in between, so that he will get sufficient nourishment. It is unnecessary to say that three good meals a day will result in a far larger intake of food when the appetite is poor.

In private schools, as well as in some of the public schools, a luncheon is given about ten or eleven o'clock, absolutely spoiling the appetite for the noon meal, which should be the main meal of the day. The argument is made that city children eat a very poor breakfast. This is not so if the child is in good health, and the diet is carefully regulated for the rest of the day. The breakfast should be well taken, and is, unless the child is allowed to imitate his elders in eating a hearty indigestible meal at night. Whenever, through poverty, an insufficient breakfast is eaten, the luncheon should be given before school begins.

Three meals a day then, and these at a regular time, are all that are needed, and more do harm. Although this is a well known fact in older childhood, the tendency in this country has been to give four or five feedings until the child is three or four years of age. For a long time I have been accustomed to ordering three meals a day for children as early as the eighteenth month, and I have found as an actual fact that they do very well upon this schedule. They eat better, learn to take new articles of food more readily, and come to the table with an appetite which gives a relish for everything that is set before them. Frequent feedings have the same effect as eating between meals, and eating between meals has been discussed so much that the well trained mother will throw up her hands in horror at the suggestion of allowing her child to nibble whenever he chooses.

It would, perhaps, be tiresome to take up each article of diet and discuss it thoroughly, but I

should like to say a word about some of the foods upon which there have been various erroneous ideas in the past.

In the first place, younger children, particularly in the early part of the second year, have not been allowed enough solid food. This is simply the reaction from just the opposite error, that of allowing the child to come to the table during its first and second year to eat all the indigestible foods which the adult is apt to put into his stomach. One error is just as bad as the other, but it is because the physician has preached against this indiscriminate eating of solid foods, that so many mothers have kept to the use of milk and cereals throughout this period. I, therefore, recommend the use of potatoes, beets, carrots, spinach, green peas, and string beans early in the second year. After the child has acquired a fondness for vegetables, this taste is retained throughout childhood. It is very important that it should be so.

Milk is undoubtedly a good food, and every child would be better off to have a certain amount of it each day, but when too much of it is taken the other necessary foods are neglected. A great many children who have a poor appetite are drinking one and one half or two quarts of milk a day, and it is only natural that they do not care for other things. Milk contains very little iron and other minerals which the vegetables supply, as well as the vegetable acids and other constituents. Children who are fed upon an almost exclusive milk diet may be fat, but they are apt to be anemic and flabby. Where, for financial reasons, children are unable to get sufficient nourishment, milk may well be given to supply the deficiency. Undoubtedly the tenement house child who has a roll and a cup of tea or coffee for breakfast, would be far better off with a glass of milk. The Italians who consider a pint of bad grocery milk as an extravagance, are very much benefited by the use of good milk because their food is lacking in the protein element.

The use of cereals is also very frequently overdone. Many children eat cereals two and even three times a day, which is, I believe, to the detriment of their health. This habitual eating of soft foods makes the child prone to rapid eating without sufficient mastication, so that later all foods are eaten hastily. This is not the only harm that it does, for the teeth are not brought into their proper use in chewing, and we all know that any organ of the body which is not made to work, degenerates. The teeth decay because they are not used. I, therefore, recommend that hard crackers and bread which has been toasted hard in the oven, be given to children of all ages as soon as the teeth have come through. The Swedish race have a very hard bread which they eat instead of our soft foods. I have seen a number of Swedish families in this country who have persisted in this custom of eating their own hard bread, with the result that the children have perfect teeth.

Meat is another article of diet that should take up our attention. It is not uncommon to hear a mother brag that she has never allowed her children to eat meat. In my mind, this is just as bad as the excessive eating of meat. Growing children need the muscle and bone building matter contained in meat, and even eggs will not take its place entirely. After eighteen months, or at the most two years, children should have meat in moderate quantities, once a day, at the noon meal. Given oftener than this, it is apt to be harmful. Steak, chops, roast beef or lamb, chicken, and occasionally boiled fish may be allowed.

Meat soups are not of the greatest necessity in the diet. Their chief use is in giving a relish to other foods which are eaten with them, but a child who is properly fed always has a relish for any food which is offered him. It has long been known that soups contain only the extractives of the meat, and very little of the protein or muscle building constituents. On the other hand, legume soups, that is, those made of such things as dried beans and peas, if cooked in a manner that renders them easily digestible, do contain far more protein that is available, and are very nourishing.

The place of fruits in the child's diet is a very important one. They help to regulate the bowels and contain elements of food which are very necessary, although in actual nourishment they are deficient. Naturally we should not always consider foods from a nutritional standpoint alone. If we thought only of the actual nourishment we were giving a child without considering the form of the food, a very ridiculous diet might result. For instance, a diet of crackers, cheese, and butter would make a highly nutritious one, with the correct proportions of fat, starches, and proteid, but few of us would think of giving our children such food exclusively.

Exercise is just as essential to the child as the proper diet, but, as I have said, under the right conditions, every child gets sufficient exercise of his own accord. In the country, children do not have to be urged to play. All that is necessary is to allow them to go out of doors where they have perfect freedom, and where there is something interesting to do every day. The problem of exercise should really be no problem at all, but, unfortunately, city children differ in this respect from country children. It is common to see children who are sick and prone to frequent illnesses during early childhood, suddenly pick up in health and become robust when they reach the age of five or six years. This is because they have, at that age, started to school and mingled with others of their kind, where the incentive to play originates, and with play comes exercise. Companionship, then, is one of the essentials in exercise. Children will not play vigorously alone, nor are they apt to do so even with their brothers and sisters unless, possibly, where there is an exceptionally large family. When a lot of children get together, each brings a new idea into the play, each one incites the other to a spirit of rivalry, and the enjoyment is far keener. One can see this illustrated daily, if one will take the trouble to watch a little child alone with his mother in the park and see how listlessly he enters into his play. On the other hand, the public playgrounds, crowded with children, are a perfect babel of voices and activity. If you should bring two or three children into the same park with all the swings and various appliances for having a good time, they would soon lose their enthusiasm.

The fact that there are many children there, doing the same thing, seems to keep them going. If you give a child a jump rope, he will not jump alone very long, but if there are half a dozen or more children, each waiting for his turn at the rope, he will be content to keep at it all day.

In going through the tenement districts, one is apt to regret the fact that little tots, perhaps two or three years of age, are allowed to play upon the street alone. It is indeed too bad that they cannot have a better playground, but, dirty as the surroundings may be and as dangerous as it may be for them to come in contact with the bad moral influences of the street, it is far better than having to stay cooped up alone. So, perhaps, as far as exercise itself is concerned, they are better off than our own children who have a small yard, of which they soon tire, or who go to the park with mother or nurse and play alone without other children to stimulate them.

Monotony is another discourager of exercise. The city child has very few places to go, especially if he belongs to the better classes. Each day he takes the same walk, goes to the same spot in the same park. Is it any wonder he does not have much enthusiasm for his play? It is a terrible bore for the mother or nurse, even though she has her sewing or book to take up her attention. It never occurs to her that the child may be far more bored than she would be with this constant repetition of the same acts.

We are not apt to think much about the matter of exercise in infancy, because the babies kick and cry and roll around to their hearts' content, but it is well to have the necessity in mind of allowing the infant to do so unhampered. Tight clothing and improper dressing in general, is the only restriction that we are apt to place upon them. Nowadays, the well informed mother dresses her baby comfortably, and allows him an hour to exercise each day, lying on the bed with his clothing off, to kick and squirm. As he gets older, he begins to creep and then walk, and he is in constant motion all the time that he is awake, and if he is strong and well, I defy any mother to prevent his getting the proper amount of exercise. During the latter part of the second year, however, there is the mistake frequently made of taking baby out in the carriage instead of allowing him to run about and get his exercise in this way. Often at this age children are far wiser than their parents and will not allow themselves to be confined to the baby carriage unless they are absolutely suppressed.

I cannot understand why this suppression is so popular, because I believe that throughout childhood—there are very few exceptions to the rule—a child should be allowed to be as active as he wishes. In fact, in the city it is only the lack of desire for active exercise on the part of the child that needs attention. The other day, I asked a mother whose child did not seem to be in the best of health, if she was very active in her play. The mother replied that her child was very lively indeed, but that she was not allowed to run when she was out of doors, for fear of getting overheated, there was so much danger of her catching cold afterward. This is not at all unusual, for I meet this suppression almost every day. If such mothers could only realize that their children are far more apt to catch cold when they do not get the proper amount of exercise, than they are when allowed to run and play all they like.

In conclusion, then, I would say: Let your children be as lively as they wish and play all they like. If they are not naturally active, encourage in them a fondness for games and sports of all kinds. I have had under my care boys who did not seem inclined to play baseball and other games with children of their age, but who cultivated a taste for it through my advice. I have frequently advised girls to take up roller skating, jump rope, and dancing, as such pastimes are very helpful in giving the body the proper exercise. Gymnasium work, basket ball, and all the indoor sports are possible for older children, often with little or no expense incurred in a city like New York, where there are so many gymnasiums. Most of us have caught the spirit of the fresh air treatment, and it would be well if we could learn that exercise is just as important.

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THE TREATMENT OF PNEUMONIA.*

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In order to take up rationally the management of any infectious disease, it is absolutely essential to study the organism or organisms causing the condition, and to seek the means whereby they gain mastery over their host. It would be well if we could go further and measure, as it were mathematically, the strength and weakness of the invading foe and contrast it with the forces of the defense, but despite a hundred years of general progress in medicine, and despite the fact that the principal offending organism is known, pneumonia still occupies that unique position in infectious diseases that its mortality figures remain unabated. I use the term unabated, notwithstanding that here and there some enthusiastic clinical observer may report, in his limited experence, a marked reduction of twenty per cent. mortality.[1]

In pneumonia, just as in every other infectious disease, it must be thoroughly understood that there is, whatever may be the etiological microbe, a bacterial invasion, in consequence of which there is an inflammation and a bacteriemia or toxemia, and that the inflammation is only a local manifestation of a general constitutional disturbance. It is immaterial whether the pneumonia is lobar or catarrhal, whether it is produced by the pneumococcus or the grippe bacillus, the pulmonary lesion is merely the local expression of the disease and is secondary in importance from the standpoint of investigation and treatment.

*Read at Eastern Medical Society, January 10, 1913, as a part of a symposium on pneumonia.

[1]It is too early to pronounce judgment on the new so called specific of Morgenroth. Although arthylhydrocuprein hydrochloride has been efficacious in experimental pneumonia; according to Wright, it has not lived up to Morgenroth's expectation in man.—*Lancet*, December 12, 1912, p. 1703.

I need not remind you of the cases where the toxemia is so great, while the pulmonary lesion remains slight, that the patient is overwhelmed with his infection, and a fatal termination rapidly takes place; or, again, where there is a marked pulmonary involvement, but with very little constitutional agitation. After all, it must be evident that the lungs present the same peculiar conditions a few hours after the crisis, as they did when the patient was in the throes of his pneumonia. If such is the case, to which, I believe, we are all agreed, the pulmonary lesion is but a minor factor in overcoming Nature's opposing forces.

What are then the causes of a losing fight, and against what agents must we direct our ammunition in the combat over pneumonia?

As a general rule, it may be stated that death takes place in one of the following three ways: 1. By toxemia; 2, by cardiovascular failure; 3, by complications.

Treatment of toxemia. It is rather sad to report that the specific treatment of pneumonia has not produced the beneficial results which have been obtained in other infectious diseases. I believe it was Klemperer who first tried out antitoxine treatment. Now and then you will hear of some one who reports wonderful results in a short series of cases, but any one who has had experience in the treatment of this baffling disease must realize how fallacious are conclusions drawn from a limited number of cases.

It must also be remembered that no specific germ causes the disease. Leaving the bacillus of Friedlander, the bacillus of influenza, and even the pneumococcus out of the question, the researches of the pneumonia commission have shown quite clearly that there are several types of diplococci, one which resembles the pneumococcus, but does not ferment inulin, and *Streptococcus mucosus capsulatus*, which must be taken into consideration. Then, again, each of these types has several strains, and in order to treat rationally with vaccines, you must use the particular strain of that culture which produces the pneumonia. Still, even with autogenous vaccines the results have been disappointing. The best results have been obtained, however, in delayed resolution, which by the way occurs very seldom and in extrapulmonary lesions. The so called polyvalent bacterins have been used in my service, but their results are doubtful.

As the virulence of the toxemia depends much upon the resistance of the host and his ability to neutralize or eliminate the poisons, our first consideration must be to fortify these as much as possible. This would indeed take up preventive measures of which I will not speak.

But, after the individual has his pneumonia, in order to fortify his resistance, it means that he must be placed at rest in a comfortable bed and that he must not be overdressed, in order not to catch cold, as "fever patients do not catch cold." The bed should be well made and well cared for, and the nurse and all other attendants should not be too meddlesome. As the patient needs mental quiet, it is absolutely necessary to exclude everybody but the nurse and the medical advisers. If the patient is very sick, all muscular efforts should be avoided, and that precludes too many medical examinations. The room should be the best and sunniest in the house. The windows should be kept open from the top and bottom so that oxygen may be given by Nature rather than from the chemist's tank. The temperature of the room need not be lower than 60° F., and your patient's feet and body should always be warm.

The diet should be nutritious and, if possible, should consist principally of milk. If this causes tympanites, it should be immediately stopped, and other foods, such as gruels, broths, coffee, albumen water, should be substituted. Tympanites would embarrass the heart's action, not only by abdominal distention, but by splanchnic engorgement. The amount of the food intake may be increased by adding milk sugar to each feeding. The intervals between feedings should be at least three hours, and medicines are to be given at the same time so as not to disturb the patient too often.

The tepid sponge bath, in the morning and evening, adds to the comfort of the patient, and this should be done, for the family's peace of mind, between blankets, and exposing only one part at a time. An ice bag to the head may assist us in adding comfort to the patient, but cold baths are absolutely unnecessary. The temperature in pneumonia means nothing, as the disease is of too short a course to allow worry about the fever. After all, high temperature is essentially as McCollom has demonstrated, a protective reaction.

Sleep should be encouraged in every way, by hydrotherapy or by hypnotics. If the patient remains wakeful that will predispose to delirium, and delirium means anything but rest to the body or mind. If veronal or trional is ineffectual in producing sleep, do not hesitate to use morphine.

To reduce the toxemia as much as possible, eliminative measures should be started immediately. At the outset, a good dose of calomel followed by salines should be given. Hot saline injections or those by Murphy's method should be given every morning and evening. Hot salines will not only keep the bowels clean and sweet, but will stimulate renal secretion and act as an antipyretic. Saline solution has a peculiar affinity for the pneumococcus, and Rosenow has tried a vaccine of pneumococcus washed out in salt solution, asserting that it renders the virulent pneumococcus avirulent. The work at Rockefeller Institute has also shown that salines, when given before the autogenous vaccine, increased the resistance of the animal to the pneumococcus. It causes leucocytosis, which means phagocytosis, and in such a short disease as pneumonia, phagocytosis must be one of the great factors in immunity. Water should be given as often as the patient wishes. If the patient is semiconscious, five or six glasses should be given daily.

As stated previously, the usual causes of a fatal ending in pneumonia are toxemia, cardiovascular disease, and complications. Technically speaking, cardiovascular failure is but another result of toxemia, and it is characteristic of the pneumonia germs to have a selective action on the cardiovascular apparatus. It might be said, just as rabies has its selective action of the nervous system, so pneumonia toxines have a specific chemical affinity for the heart

and bloodvessels. Romberg and Passler have shown that the toxic albuminates of pneumonia paralyze the vasomotor centre, thus resembling the section of the splanchnic nerve.

There is first an engorgement of the vessels of the intestines and the abdominal viscera. The blood supply of the heart is thereby diminished, the right side receives less blood and thereby cannot send as much to the left side, causing anemia of the nervous system and other organs. The endocardiac pressure will naturally sink, and the heart will have to contract faster and faster until it finally stops. How great an influence engorgement of the splanchnic vessels has on cardiac failure can be shown by the killing of normal rabbits just by holding them upright. Turkingen maintains, and he has been corroborated by pathologists, that in all his autopsies in genuine pneumonia cases, he has found fatty albuminous material in the myocardium.

Clinically, we depend as much upon the state of the bloodvessels as we do upon any other organ. The presence of degenerated vessels, even in the young, make us wonder, after all, is not this particular pneumonia a terminal infection, and is this not Nature's way of removing one of the unfit? In this connection it is well to call attention to the relationship of blood pressure to the prognosis of pneumonia. To cite Gibson's words: "A pressure appreciably below normal is invariably of evil omen and any considerable fall bodes disaster. When the arterial pressure expressed in millimetres of mercury does not fall below the pulse rate expressed in beats per minute, the fact may be taken as an excellent augury; while the converse is equally true." Practically these laws still hold good, and it has marked a step in advance to previous haphazard measures of treatment. In other words, when the blood pressure is falling, vasomotor constrictors are imperatively needed. If the blood pressure remains higher than the pulse rate, and if the heart signs are satisfactory, Nature is making a winning fight and your help is not called for. If it so occurs that while the pressure remains normal, the speed of the pulse increases, while the first sound of the heart becomes muffled and the second sound not distinct, with increased area of heart dullness, the cardiac stimulants are indicated. Thus, according to indications, vasoconstrictors or cardiac stimulants, or both combined, will be employed in our fight against this treacherous disease.

Of the vasoconstrictors, camphor in three or five grain doses, dissolved in sterile sweet almond oil, has given me the best satisfaction. The next best drug has been the double salt of caffeine. I have used the adrenalin chloride intravenously in salt solution for the sudden sharp falls, and it has certainly proved of inestimable value. If I was limited to one drug, though, in the treatment of pneumonia, my choice would be camphor first and last.

Digitalis heads the list of the cardiac stimulants. This drug has certainly not lived up to its reputation in acute fevers, but there are any number of cases that absolutely require it. On account of its slow action, strophanthin in 1/120 grain dose should be used intravenously, followed by the tincture or some other potent preparation of digitalis. The strophanthin will hold the heart until the slower digitalis derivatives begin to be efficacious.

The indications for the use of nitroglycerin and the nitrates are but few. If the pressure is abnormally high in the early stages, it is probably due to Nature's stimulation by the fever for the purpose of creating more antibodies in the blood.

Aconite, which has been lauded by a distinguished clinician, is not only of little value, but may be harmful. There are any number of patients who will get well in spite of any treatment; and it may be that the drug had very little influence on the blood pressure. Price, in Cushny's laboratory, has shown that aconite, as sold and prepared to-day, is practically inert in medicinal doses. This has been confirmed by Rudolf and Cole, of Toronto.

In cases where the pulse is good, but where there is a great deal of blueness of the skin, dyspnea, albuminuria, large liver, and an increased area of heart dullness to the right, symptoms of right heart embarrassment, venesection is the proper procedure.

Edema of the lungs, with low arterial pressure, should be combated by epinephrine hydrochloride and atropine sulphate. Atropine not only acts as a splanchnic vasoconstrictor, but dilates the peripheral vessels as well, thus restoring circulatory equilibrium; but in those cases of edema where the tension of the pulse is increased, your best success would be with venesection and artificial respiration.

Pain is best relieved by cupping, by mustard plasters, or by adhesive strappings, but if despite these procedures it still persists and is at all distressing, opium or its alkaloids should be administered.

Cough, unless nagging and exhausting, should be let alone. If the cough, though, is due to pleurisy, it accomplishes nothing, and that can be treated in the usual manner, but if it is due to bronchitis, the cough is a conservative symptom and it should not be interfered with unless it is exhausting in its nature.

To prevent reinfection of the lungs, creosote, iodide of ammonium, and hexamethylenamine have been used. All have been given too much credit, as their influence upon the course of the disease is a mooted question.

The toilet of the mouth, tongue, and nasopharynx should be religiously attended to during the entire course of the infection.

The complications of pneumonia with their treatment are too many and varied to be discussed in this paper, but I cannot close this subject without alluding to the aspirating needle. In all cases of protracted temperature, or after postcritical rise, thoracic puncture should be tried. Again, in conditions where the delirium is marked, but with a slowing of the pulse and retraction of the neck, plus symptoms of endocranial pressure, lumbar puncture may not only aid in diagnosticating a meningitis, but prove of decided therapeutic benefit.

Judgment should be exercised in handling convalescence. Laxity at this time may defeat a happy termination by producing a pulmonary embolus or an acute cardiac dilatation.

As a rule, if the case is of average severity, the patient must not be allowed to leave the bed before a week after complete resolution. The pulse and blood pressure should be frequently noted, and only

until both are normal after muscular effort should the patient be permitted to sit up.

At first this period should be short to avoid exhaustion, and should be increased only slowly. Exercises should be graduated and increased daily so as not to cause cardiac overstrain.

This concludes the general rules and indications for our treatment of pneumonia. In summing up, it is well to recall that each patient is a law unto himself, and that each individual patient's blood pressure and vascular state will probably differ in some degree. Some cases will demand vasoconstrictors, such as camphor, caffeine, or epinephrine. Others will demand only cardiac stimulation, and even a few will demand venesection and vasodilatation. The combination of all methods may be required, but it is only by means of the intelligent study of the blood pressure and vascular state that better results can be realized in the treatment of pneumonia.

203 WEST SEVENTY-NINTH STREET.

JEQUIRITY IN OPHTHALMIC WORK.

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The therapeutic uses of jequirity in ophthalmic work are not unknown, yet the services of this medicament are but seldom invoked. Its value in chronic affections of the eyes has long been recognized in India and. in my opinion, it merits more widespread acceptance. In a short paper in the *Prescriber* for March, 1911, I drew attention to the use of infusion of jequirity in ocular practice, and, as I have since then had further opportunities of testing the drug, it may not be without interest to discuss my later experiences, although continued trials have merely confirmed my previous findings.

Jequirity seeds are obtained from *Abrus precatorius,* a shrub of the natural order leguminosæ commonly met with in India and Brazil. In the *British Pharmaceutical Codex* we find the characters of the seeds thus described: "The seeds are well characterized by their smooth, glossy surface and bright scarlet color, with a black patch at the hilum; they are ovoid and subglobular in shape, and vary from five to eight millimetres in length, their breadth being about four or five millimetres. The hard kernels possess the characteristic leguminous odor and taste." These familiar scarlet and black beans are frequently formed into necklaces.

In making use of it in ophthalmic practice my custom has been to employ the infusion of jequirity in the strength of one in 12.5. The cases in which it has been prescribed were cases of granular conjunctivitis and corneal opacities. A requisite knowledge of what is expected to occur is very desirable, for to the uninitiated the intense reaction frequently provoked is somewhat alarming. It is also but right to inform the patients that in all probability the eye condition will temporarily become worse. Such a precaution will avoid much needless mental anxiety. The effect of the instillation of infusion of jequirity into the eye is to produce a marked inflammatory reaction of greater or less severity—the so called "jequirity ophthalmia." There is generally severe conjunctival chemosis and there may be considerable edema of the lids. Such symptoms as intolerance to light, lacrymation. pain, etc., which are common to all acute inflammatory affections of the eye, are present. The acme of the inflammatory reaction is, as a rule, reached in from twelve to eighteen hours after the instillation, and the acute symptoms have generally subsided in three or four days' time. The infusion of jequirity may have to be exhibited several times, but it is inadvisable to repeat the instillation until the acute symptoms have subsided. The interval between applications will naturally depend to a large extent on the intensity of the reaction produced. Very often a further instillation of jequirity may be permissible after four days; in other cases an interval of a week or ten days must be allowed to elapse.

In my article in the *Prescriber* I cited the case of J. G., who was cured of trachoma by the vigorous application of copper sulphate subsequent to the use of infusion of jequirity. This patient was a boy from a training ship and a few weeks later I had a companion of his from the same ship. He was treated in the same way with good effects. It is almost superfluous to mention the seriousness of an outbreak of granular conjunctivitis in an institution such as the one just referred to, and any means which will effect a prompt cure is welcome. My experience has been that jequirity properly applied will considerably lessen the time required to cure granular conjunctivitis.

I had often wondered what would happen if jequirity were employed in cases where some acute manifestation was superimposed on an old trachoma. I had recently an opportunity of trying the effect and the record of the case may be of interest:

CASE. E. M., a young adult female, twenty-five years of age was training for a nurse, and in the course of her duties she contracted trachoma which affected the lids of both eyes. After a preliminary course of the usual remedies, including sulphate of copper, the operation of "rolling" was practised on both sides. Subsequent to this the copper sulphate was continued, and in time the left sided granular conjunctivitis was cured. The right side proved intractable, and a perfect cure could not be said to have been effected. For a time she disappeared, but she again came under observation for keratitis in the right eye; that is to say, in the eye in which the trachoma was imperfectly cured. The condition of the lids was much the same as when she had been last seen some months before. I was extremely anxious to try infusion of jequirity, but hesitated in view of the keratitic condition present. When the acute stage of the keratitis had passed I decided to try the jequirity treatment. The patient was kept under constant observation and one drop of infusion of jequirity (one in 12.5) was instilled into the right eye. A reaction of moderate severity followed, in which pain, lacrymation, chemosis, etc., were evident. There was a slight rise of temperature, the evening temperature after the instillation of jequirity being 99° F. In four days' time the jequirity was again applied and after another four days a further instillation was made. In the evening after each instillation a rise of temperature of 0.5° F. was noted, but on the following days the thermometer registered 98.5° F. or rather less. The jequirity did not appear to aggravate the keratitic condition in the least, and at the conclusion of the treatment the corneal condition was much improved and very little opacity has remained. The granular condition of the lids has also disappeared, and the woman appears to be quite cured.

In making use of infusion of jequirity in eye affections it is very important that the infusion should be properly prepared, and there are several details which must be attended to. It is essential that the infusion should be freshly prepared, because decom-

position quickly takes place and we can no longer be certain that the solution is a standard one. It is frequently advised that a little boric acid be added as a preservative, but even with that addition it is impossible to guarantee that the strength of the solution will be maintained. The actual preparation of the infusion must be carried out with all possible care. A certain temperature is necessary and must be exactly determined with the aid of a thermometer. On no account must the temperature exceed 50° C. If heated beyond that point the enzyme responsible for the peculiar reaction is destroyed and the solution is rendered inert. As described in the *Prescriber* the infusion is prepared in the following manner: "Some distilled water is boiled and then allowed to cool to 120° F (49° C.); twelve and a half drachms of this are measured out, a drachm of powdered jequirity is taken, and the distilled water at this temperature is poured on the powdered seeds. This is allowed to stand until cool and the infusion is then decanted." In my opinion the solution should not be filtered, but the slightly opalescent fluid obtained after decanting should be employed for the instillations.

If no reaction follows the instillation of a drop of infusion of jequirity, one must not jump to the conclusion that the solution is inert, for it will be found that some people do not respond. A drop of the infusion placed in the eye of another person will often induce a vigorous reaction. In referring to infusion of jequirity, I have always spoken of one drop being instilled, and this I consider of practical importance. In some books I have seen the statement that infusion of jequirity is applied as a lotion to the eyes and if used in quantity to flush out the conjunctival sac it is quite possible that serious consequences might arise. Judiciously applied, infusion of jequirity can with perfect confidence be presented, and is a valuable addition to the medical man's therapeutic armamentarium in ophthalmic work.

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HEART BLOCK (ADAMS-STOKES SYNDROME).

Report of a Case.

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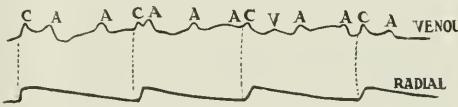
The conclusions drawn from the large percentage of all cases of clinical heart block are founded upon experimental demonstrations. Pathological observations alone, numerous though they are, do not suffice to establish the fact that heart block is due to a lesion of the bundle of His. Positive proof is the outcome of experimental work. Therefore, I do not consider it superfluous to review the most important experimental work done in that line.

The experiments of Romanes upon the umbrella of the jelly fish, in which transmission of contraction first received careful study, laid the foundation of our present knowledge of the subject. The researches made by Gaskell established the dependence of conduction upon direct continuity of musculature, thereby giving us a conception of the mechanism of impeded conduction (heart block) in the cold blooded animals.

The earliest experiments on the mammalian heart are those of Tiegerstedt (1), Wooldridge (2), and McWilliams (3). They proved the subservience of the normal ventricular rhythm to impulses from the auricle. We are chiefly interested in the localizing of the path through which these impulses are conveyed in the mammalian heart. That dissociation may occur in the mammalian heart was known for centuries, only the cause remained obscure.

Harvey, in his essay on the movement of the heart, states that he noticed a prolongation of the interval between ventricular and auricular contraction, and at times one ventricular contraction would follow several auricular contractions. Tiegerstedt and Wooldridge attempted to dissociate the auricle and ventricle, but the result is not conclusive, as the operation caused widely spread damage to the heart.

Two years after His described the auricular bundle, he, together with Graupner (4), succeeded in destroying the connection between auricle and ventricle in the heart of a rabbit, producing dissociation. Hunblet (5) excised the heart of a dog, nourished it by transfusion, and passed ligatures tightly around the bundle. In eight experiments



he obtained seven positive results, viz., heart block resulting. In 1905-6, Hering (6) published his results, where damaging the bundle of four dogs resulted in heart block, two cases being accompanied by tracings. The first experiment on the heart *in situ* was done by Erlanger (7). He did not succeed, however, until a special clamp was employed, by which he was able to destroy the bundle without damaging the heart proper. In seventeen experiments he obtained sixteen positive results. Tabora (8) experimented after a similar method and obtained equal results. The latest and most laborious work is that of Cohn and Trendelenburg (9). Their work was done with such care that their original article is worthy of study by all interested in the subject. Their observations were conducted upon the perfused hearts of twenty-six cats, seventeen dogs, four rabbits, two apes, and four goats, and published with a complete report of the disturbance in the heart, a diagram of the bundle and lesion, a tracing of the heart's mechanism, and frequently macroscopic photographs of the lesions. The results were as follows: Where the incision failed to reach the bundle, or where the bundle was but partially out, there was no disturbance or but a partial disturbance; where the bundle was transsected, complete heart block resulted.

Contradictory observations were reported by Kronecker and Busch (10), who announced that they had destroyed the bundle in the rabbit without causing heart block, but they did not produce any histological proof of their work.

Imchanitsky (11) worked on the heart of a rabbit and a dog *in situ*, destroying the bundle and

also showing the destruction of the bundle microscopically without having caused heart block. He did not, however, demonstrate having made serial sections of the bundle.

Pankul (12) experimented on twenty-four rabbits and found that heart block did not result because of damage to the bundle; on the other hand, it did result whenever he damaged the neighborhood of the bundle.

The objections to the conclusions are that Kronecker and Busch have no histological proof. Imchanitsky has only a single observation. The more extensive work of Paukul shows that the sections were made at right angles to the course of the bundle, so that it is probable that branches of the bundle leaving the main track in the earlier part of its course would escape observation as a result of his technic, especially in the rabbit, where such early outgoing fibres are present.

In summing up the observations, it may be said that the coordination of auricle and ventricle depends upon the integrity of a limited tract of tissue stretching between the auricle and ventricle, and destruction of that tract causes dissociation.

CLINICAL HISTORY.

In 1761, Morgagni published the report of a case of slow pulse. In 1827, Robert Adams (13) reported the case of a man, sixty-one years of age, with a pulse of 30, fainting spells, and apoplectic seizures, without paralysis. Burnett (14) reported the case of a similar character in the same year. Holberton (15) reported a case, in 1846, of slow pulse, with fainting fits, and in the same year William Stokes (16) described his case, characterized by persistent bradycardia, fainting spells, and convulsive seizures, but no unconsciousness. Since then the disease has borne the name of Adams-Stokes.

Heart block, it should be remembered, is not synonymous with Adams-Stokes disease, as the latter is only the symptom complex that is very frequently associated with heart block, but there may be heart block without the Adams-Stokes symptom complex.

The first suggestion of dissociation of the auriculoventricular junction in man dates back to 1875, when Galabin (17) reported the case of a slow pulse of thirty-five a minute and remarked: "We have here a heart, the auricle of which contracts twice as often as the ventricle." He based his account upon auscultatory phenomena and tracings of the apex beat. In 1885, Chaveau (18) obtained tracings of the neck and apex beat and the radial pulse in a case of bradycardia, showing dissociation. He attributed the lesion to the medulla, where the nucleus of the vagus was diseased. In 1899, Wenckenbach (19) and His (20) described cases of heart block in the human subject and suggested a lesion of the auriculoventricular junction. The former based his diagnosis upon arrhythmia of the ventricle and the latter furnished polygraphic curves. Mackenzie's early publications (21) advanced the knowledge on the subject immensely, and during the last few years a multitude of cases was reported both clinical and post mortem, notable among which are those of Osler, L. F. Bishop, von Leube, Fleming, Hoffmann, James, Ashton, Norris, and Lewinsohn.

The pathological changes may be impressed on our memories by citing some of the findings. Ashton, Norris, and Lewinsohn (22) reported a gumma of the bundle of His, Bishop (23) also a gumma of the bundle, Hay (24) stretching of the auriculoventricular bundle with obliterations, Fleming and Kennedy (25) lymphatic deposits in the nose and bundle, Sendler (26), in 1892, a round cell sarcoma of the septum, Jellinck and Cooper (27) auricular infarction of the bundle. And there are many others.

The conclusions that can be safely drawn therefrom are as follows:

1. A slow pulse is due to a dissociation between the auricle and ventricle (heart block).

2. The syncopal attacks (Adams-Stokes syndrome) are due to cessation of the ventricular beat, but not to that of the auricle.

Aside from the local lesions, pathological changes are also found at other portions of the vascular system, such as sclerosis of the coronary arteries, fatty heart, dilated aorta, etc.

While we saw from the foregoing that bradycardia, or rather heart block, is the result of a lesion of the bundle of His, we should not forget that there are cases where heart block results and the bundle of His is completely intact. Nagayo (28) reports two cases of heart block which histologically, microscopically, and macroscopically show absolutely no lesion in the bundle of His, but the left ventricle was diseased. To this group may also be counted the cases described by E. Neusser (29), and cases that are so frequently observed where heart block is of a transient nature. Bradycardia in the course of acute articular rheumatism, or in the course of acute infectious diseases, or as a result of an advanced arteriosclerosis or myocarditis and fatty heart belongs to the myogenic type.

Nagayo tries to explain the heart block in his cases by the fact that the ventricle is so diseased that it fails to respond to all impulses of the auricle, that the conductivity between auricle and ventricle is not disturbed, but as the conduction reaches the ventricle it is too weak to respond to more than the second or third impulse. Such heart block he designates the "mural type." In this form, in contradiction to the heart block where the bundle of His is diseased, there exists incomplete dissociation, which means that with the improvement of the heart the normal condition returns. This condition is transient.

There is still a third type of heart block, viz., the neurogenic type, which will be best illustrated by citing some of the published cases. A typical example of temporary vagus heart block was mentioned by Hirschfelder (30), citing Tannhoefer, in which a physician, compressing his own vagus, suddenly gave a staring look, could not move his hands, and became unconscious. His pulse became very slow and his hands had to be moved, after which he recovered consciousness in the course of a few seconds.

Holberton (31) describes an autopsy in the case of a man, aged sixty-four years, where the clinical symptoms were those of the Adams-Stokes syn-

drome, but where the post mortem examination showed a narrowing of the spinal canal compressing the medulla, and no changes in the cardiovascular system were found.

Neuburger and Edinger (32) also describe a case of syncopal attacks and slow pulse, where post mortem there were no heart changes; instead, the spinal cord in the cervical region was very much diseased.

Lépine also describes a similar case. An interesting case is cited by Lanois, where a girl, twenty-two years of age, had contracted typhoid fever and died in an attack of syncope with slow pulse. Autopsy showed, aside from the pathological changes of typhoid, the bronchial glands pressing upon the left vagus.

The bradycardia that is associated with the symptom complex known to-day as "vagotonia," can be classified as the neurogenic type.

Other influence of the vagus, endocranial disease, tumor or abscess of the brain, inflammatory changes, and cerebrospinal meningitis are causes of bradycardia. For the neurogenic type of bradycardia we can add to-day the type of slow heart that goes along with the vagus tonus, where there is a set of symptoms including contracted pupils, vasomotor disturbances, and a slow pulse.

Among the drugs that cause extreme bradycardia, digitalis should be mentioned first. E. Neusser (29) reports a case where owing to administration of digitalis, bradycardia and arrhythmia set in. The patient went into convulsions, from which he never recovered. Johanson reported a case where there was softening of the brain on account of a thrombus of the left middle cerebral artery, causing heart block.

Mackenzie (34) demonstrated that, whenever the polygraph shows a marked delay between the auricle and carotid curves, digitalis ought not to be used. Poisons of the type of muscarine, aconite, and tobacco are causes of transient bradycardia. Transient bradycardia is also frequently associated with catarrhal jaundice and postscarlatinal fever. Cases of meat poisoning have also been reported as cause of transient bradycardia.

From what was said above, it follows that when diagnosticating a case of heart block, we must decide to what pathological group it belongs. By far the most important as well as the most dangerous type is where the bundle of His is diseased. These are cases of complete dissociation, and the condition is never influenced by drugs.

The second variety is the one described by Nagayo as the mural form, which is one of transient nature; with the improvement of the heart muscle there is still a possibility for the heart block to disappear.

Finally, there is the third type, the neurogenic, where the heart block is influenced by atropine. Administration of atropine sulphate, one sixtieth grain, hypodermically, will remove the heart block temporarily. This is very important for the diagnosis.

As to symptoms, I shall try to cover them by describing a case of my own.

Case. M B., sixty-four years old, male nurse, good family history, had six healthy grown children. Denied venereal infection; smoked moderately up to eight years ago. Up to about that time he was perfectly well, but suddenly began to feel weak and one day, while in the street, he became unconscious and those around him reported that he had a short convulsion. He was taken to the Mount Sinai Hospital, edema developed of the lower extremities, and he was treated for several weeks. While in bed, he had never any attacks, but the first day after he left the hospital he had another seizure. Then there was a few weeks' intermission free from attacks. As he understood his own pulse, he observed that it never went any quicker. He also seemed to be able to foretell an attack, his pulse being slower still on those occasions. He also learned to prevent an attack by sitting down and bending his head down.

Physical examination. Patient was fairly well nourished; complexion pale. Pupils reacted normally. No sign of endocranial pressure and no sign of syphilis. Pulse twenty-eight a minute, not easily compressible. Maximal blood pressure 190, minimal 160. The heart beat could not be seen, at the apex it was hardly palpable. Percussion disclosed the heart to be slightly enlarged to right and left, which was confirmed by the x ray.

Auscultation. A slight systolic bruit was heard at the apex; second sound hardly audible at the apex, second pulmonic and aortic sounds not audible at all; jugular pulse more than twice the number of the carotid.

The observation made by Denicke, and confirmed by others, that fluoroscopically two or more contractions of the auricle can be seen to one of the ventricle was also well demonstrated in this case. Other signs that have been described could not be observed in this case, such as a faint sound like the tick of a watch near the left sternal border, described to be auricular, and the same sound said to be felt in the radial pulse.

The electrocardiogram, according to Kraus and Nicolai (35), Hirschfelder, and others, aided in the diagnosis, but I have not been able to avail myself of it.

The atropine did not remove the heart block in this case. For the accompanying polygraphic tracing, which is the most conclusive aid in the diagnosis, I am indebted to the kindness of Dr. Selian Neuhof, to whom I also wish to express my gratitude for advising me in selecting the literature on the subject. Another tracing should have been made after the use of atropine in order to complete the diagnosis. My patient was asked to attend again so that a second tracing might be made, but he failed to do so.

The urine and blood examinations, as well as the Wassermann test, were negative.

PROGNOSIS.

In complete heart block, the prognosis as to life is bad. Sooner or later the patients succumb to one of the attacks. Some last only months, others years. Osler described the case of a man who suffered from bradycardia for thirty years and the Adams-Stokes complex for the last nine years. My own patient has had the disease now for the last eight years. The other varieties of heart block, such as the mural type and the neurogenic type, depend upon the degree of the lesion.

TREATMENT.

The treatment also depends upon what kind of heart block we have to deal with. In the most frequent cases, viz., where the bundle of His is diseased, we can only hope to be successful if the lesion is due to a gumma, as in that case antisyphilitic treatment is most satisfactory. In the other forms which are not due to syphilis, treatment is purely symptomatic. Physical and psychic emotions should be avoided. If the patient must follow an occupation, it should be of the lightest kind, never allowing any exertion.

Hydropathic procedures should consist only in lukewarm baths, never longer than from ten to fifteen minutes, always under observation of another person, and rest and friction after the bath.

If the blood pressure is not too high, carbonic acid baths under careful supervision, not more than twice weekly, and lasting no longer than two minutes, may be used to advantage.

The diet should also be such as to meet general arteriosclerosis and myocarditis, viz., small quantities at frequent intervals, partaking of very little water and certainly of none with meals, and also reducing the proteids to a minimum. The deficiency should be made up by vegetables and easily absorbable fats, such as cream and butter. Care should also be taken not to give any fermentative food, so as not to cause pressure on the diaphragm which might bring on an attack. Bending the head down often prevents an attack.

As to drugs, we are quite at a loss. There seem hardly to be any that have a direct influence. Atropine has only influence in the neurotic type; caffeine and sodium benzoate may sometimes be used. According to Osler, spirit of nitroglycerin ought not to be used at all, as it is even dangerous; potassium iodide may be tried in almost every case, as, sometimes at least, it has a beneficial influence.

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51 EAST SEVENTH STREET.

SUITABLE AMUSEMENTS FOR THE GROWING CHILD.*

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What shall I play? What shall I do next? How many times we have heard it, sometimes because the child was fretty, sometimes because he was unimaginative. Whatever the reason for this incessant demand or appeal, we must be able or learn how to satisfy it. If we answer it even incompletely, our effort will not perhaps seem in vain to fathers and mothers, uncles and aunts, to say nothing of the neighbors.

It may be paradoxical, but play is really a serious matter, that is, to the parents. They should, and often do acquire a respectful attitude toward it when they understand its object. The child from the beginning has an instinct for play, and in his games does everything that men in the past have done, to the improvement of the race. Running, chasing, hunting, catching, all helped the savage to master his environment. So *play* helps to make the child strong, physically, mentally, morally. We must make it *our* duty to provide the right kind.

In solving the problem, we shall consider the environment of the family and suggest games that are at present practicable or that can be made so. We shall take into consideration that the complex conditions of modern city life make it impossible for the parents of to-day to do just what their parents did. Every mother realizes that the kind of freedom which she enjoyed as a girl is not the inheritance of her daughter. Every father realizes that, in these days of narrow streets, automobiles, and apartments his son's recreations differ from those he enjoyed or submitted to when a boy. But both parents should realize that they may share their responsibility with proper authorities, such as the recreations, the Y. M. C. A., the settlements, etc.

The problem may be more difficult to-day, but parents can learn to overcome their environment. In planning homes, precedence should be given to playrooms rather than to dens. Or, if no special room can be set aside, let some spot be allotted to play for at least part of the time; and a sympathy between mother and child will do much to relieve the constant friction between the active boy's restlessness and the mother's desire for calm. It is not, Peabody says, bad books, bad habits, bad companions that first make the bad boy; it is *homelessness*. Let us then make the home brighter with a few flowers in the window, a kitchen garden if possible, an occasional pet. Let us make the home the centre of attraction, the centre of amusements.

All the fun cannot be in the house, however, for fresh air and sunshine are the proper conditions for play. The father and mother must plan to let their children enjoy what the public offers if vacant lots and back yards are not their own. There are parks with their valuable collections of flowers, birds, and animals, and public playgrounds and settlements. If only streets are available, the parents must know what streets are used for play and try to make them safe. This winter the directors of the Museum of Public Safety are going to give, under the auspices of the board of education, a course of lectures to children, and hope to show them how the streets can be safely used for play. If there could be an ordinance for assigning certain streets for play, mothers would have less to fear.

We are going to submit gracefully to our lot

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then, since submit we must. If we have a few rooms, not a house, we are going to let the children call part of it theirs part of the time. If we have no back yard, we are going to get out in the sunshine, somewhere, in a safe spot.

Having spoken of play in general, let us, in order to be definite, now consider the various ages with their suitable amusements. Before school age, the mother knows the constant activity of her child and makes provision for it. At the creeping stage, it is wise to have a small pen or yard, either in the house or, in favorable weather, outdoors, in which the baby can play. If it is provided early enough, the child is content because of, or in spite of his remoteness from the outside world. He will play as long as his muscles allow, or perhaps until feeding time. Repetition is his delight, and with a few standard toys from which the paint cannot be licked or the woolly down eaten, he can be safely left alone and the mother can do her work.

This method of entertaining will obviate the necessity of giving the child that vicious plaything, the pacifier. If he is well fed, he is perfectly happy when very young to play with his hands, and later with toys. Do not confine his activity to the muscles of his jaw. If he is to sit on the floor, let him use his legs, arms, and back as he will, and exercise *them*. If he is on the street, let him get his pleasure with his eyes. Do not thrust the pacifier, which at best is somewhat dirty, into a clean little mouth. I speak at length about this because the use of the pacifier brings in its wake a long train of bad results; in the young, colic; in the older, badly formed jaws from constant sucking, large adenoids and tonsils. To every mother I say beware! The easy thing is the harmful thing.

But what should a child in his first year play *with?* His natural instinct of curiosity will guide you. Do not, therefore, constantly try to divert his attention by something striking. He will get his fun from the motion of his hands and feet at the same time that he is developing his senses of touch, sight, hearing, etc. Give him a few things: keys to jingle, some tissue paper to twist, pull, or shake, a spoon for pounding, the well known rattle, a few spools on a string, some brightly colored objects. These will keep him happy at the same time that play is serving its purposes of helping him to grow and understand his physical environment.

At *twelve* months the child is playing with blocks and picture books. From *one* to *three* years he likes and should have celluloid balls, nests of boxes, harmonicas, trumpets, whistles, bells, flags, dolls, carts, toy furniture, and best of all, the sand pile. The sand pile is so important as an amusement that it is worth while studying it a moment. What does it do for the child? Why should he have one? He needs material for his play, and if the material is plastic so much is it nearer the ideal. In the sand pile the child has something that he can play with endlessly, with infinite variety, and yet with the repetition that he loves. It encourages the imagination marvellously and continuously, and is suitable for a child from *two* to *fourteen* years. Preferably let it be outdoors; if necessary, inside.

From the years *three* to *six*, outdoor amusements become prominent. The child begins to run and skip, jump and slide, toss and catch. He visits the park and real country, and satisfies his curiosity in birds, animals, and flowers. He likes a wheelbarrow, a rake, a hoe, and a watering pot if his mother doesn't object. The girl wheels her doll carriage, and the boy rides his velocipede. A word of caution seems necessary here. Be sure that the power expended upon the velocipede or hand worked automobile does not overtax the heart. The mother must know whether her child's heart is weak or strong.

From *four* to *six* years various new instincts become noticeable. Our child now likes to collect things; he is happy who can come home from a walk with sticks, stones, leaves, or other unimportant things which attract his eye. He begins also to reason about things: Why is the snow white? Why is it cold in winter? and an inexhaustible number of other whys. His imagination, too, begins to emerge; the little boy has a spirit friend to whom he talks and who has to take the blame for his own naughtiness. This first appearance of the imaginative mind, which seems silly to some, is perfectly normal and not to be discouraged. In play the child will now occupy his time very well with imitation games. "Play house. Play store!" he says. A little later, when there may be a more complicated type, the boy says, "Play doctor. Play Indian!" The girl says, "Play school!" The boy also likes his trains; the girl, her dishes. And they are both especially content, if they can have scissors, paste, beads, crayons, or clay for modelling. There should be at this time, furthermore, a strongly developed interest in story telling, music, and dancing games.

The age from *six* to *twelve* years we find to be essentially, in play with other children, one of contest. Ever active, children aim when playing together to do the very best that their strength permits. The spirit of rivalry is so strong that no excuses for halfway results are tolerated. Joseph Lee, in one of his pamphlets, very aptly says: "The other fellow does not care for the mother's remark, 'Little Johnnie did his best.'" Failure means punishment. The games involve not only strength, but alertness, endurance, accuracy; and the boys now try to make records for themselves. Tag, hide and seek, and ball are the favorites; in these we see the game elements of chasing, hunting, throwing. In this age where fifty per cent. of the boy's interest is connected with motion, where his games are naturally active, do not get mechanical toys with elaborate machinery which need only to be wound. Let the boy be happy with kites and tops. If he himself cannot put his Humpty Dumpty together, he soon tires of its uselessness. The father must not criticise his son for a seeming lack of appreciation of an expensive toy.

At *seven* or *eight* years thought power comes into the game interest: the children love riddles, guessing games, and magic. Outings, too, should now be provided, for there is an ever increasing appreciation of the country. The boy loves to explore for stones and shells, bugs and butterflies, flowers and ferns. Nutting, hunting and camping are his delights. From *seven* to *nine* years certain apparatus may be supplied; see saw, stilts, wheelbarrows,

bows and arrows, and fish nets. For constructive work, the fortunate boy with vacant lots and sand heaps at his disposal can dig caves and make houses and wigwams. The doctor has a word of caution here. It is at this age, from *seven* to *nine* years, that the child has a tendency to physical setbacks: he fatigues rather easily and we know that in school there are fewer promotions. The mother must see to it that her offspring does not get overfatigued. On the other hand, she must eagerly encourage play, not only as a very delightful thing in itself, but as an educative means to the end that her child may know when older how to meet an emergency.

From *nine* to *fourteen* years the boys and girls like games that combine muscular action with training of the senses, games that require attention and a definite purpose. Games of contest now need a leader and little Johnnie *must* do his best. Hare and hounds, fox and geese, leapfrog are known to every boy; foot racing, baseball, and football need hardly be mentioned. But this is by no means an age merely of athletics: it is the golden period for memorizing. The boys like stories, too, and are well entertained with collections of fairy tales such as those of Andrew Lang, and with stories of adventure like Stevenson's. They should all know King Arthur, Ulysses, Æneas, and Hiawatha. If stories pall on a rainy day, bring out jackstraws, dominos, checkers, or illustrated proverbs, or games involving history.

Up to this time girls and boys have been somewhat similar. No physical differences have made it advisable to suggest any differences in the games. From now on, however, the differences become marked. But sentimentality can be avoided to a large extent if the two sexes have enough play interest, and do not become morbid. From *thirteen* to *fifteen* years, there is a tendency to revery, to self consciousness, to dreams of greatness, and a desire to show off; there is a liability to misdemeanor and incorrigibility. But interest in *team* play will help to lessen these tendencies; loyalty to a captain and companionship with others will clear almost any brain of cobwebs. If the team can have the right kind of leader all is well. "The gang" which is such a pest in a city need not exist for lawlessness, if suitable games are provided; for as someone has said, "Where games flourish, fighting ceases." Football and basketball do much to bring the boys off the street corners.

What the team does for the boy, the folk dances can do for the girl. They have a peculiar value because of their symbolism; and, in addition to the pleasure derived from this thought, they furnish splendid exercise for the girl, who at *fourteen* years is already sitting too quietly at her sewing. Many settlement workers, who have tried to stimulate the imagination of girls by games, say that folk dances rouse them better than anything else. It is easy to see the reasons. The dances that represent the sowing of the grain, the reaping of the harvest, the pursuit of the enemy are in themselves interesting, while the rhythm and the social opportunity of dancing with others are added attractions. Simple dramatics also arouse in the girl the proper kind of interest. Charades, stories, parts of plays recently seen, acted with the simplest sort of stage setting, stimulate her normal dramatic instinct. When we consider what exercise and especially dancing and the drama accomplished in the development of the Greeks, we feel that we ought to give the girl greater opportunity along these lines.

Up to this point we have dealt with games which are naturally and largely regulated by the home. Now we shall investigate some of the public institutions. What is the most popular? I am sure small boys would answer, "The Movies." So we ask, "What is it they offer? What is their effect on the child? Are they to be encouraged or tabooed?" Those who speak against them say, 1, that the child goes for excitement, that the kind he gets is unwholesome. The eagerness with which he asks for a nickel certainly suggests more or less uncontrolled desire for continuous stimulation. The opponents say also, 2, that the refusal to admit minors unless accompanied by older people shows that the discerning public realizes the need of supervision. They say again, 3, that the pictures are often of questionable nature; 4, that the ventilation is poor, that the time spent at the "movies" might better be in the open air; 5, that the eyes suffer from strain. Those who speak most convincingly for the pictures contend, 1, that they satisfy a child's normal desire for a story in drama form; 2, that the majority of the pictures are wholesome and even educational; 3, that they supply a place where the whole family can go together and are a social boon. To those parents who can provide the best of drama, I should not recommend the moving pictures as they are. For the sake of the others, we should work to create an enthusiasm for laws which shall regualte these shows. Better ventilation is possible. Authorities say that much strain on the eyes could be avoided if the rooms were lighted, and that this could be done without damaging the clearness of the picture: A mother can dissipate much of the unwholesomeness of the pictures if she or some older person she respects accompanies her children. If she will applaud too only the good pictures, the manager will soon learn how to satisfy the best instinct of his audience. The moving pictures can certainly be viewed with good intent and beneficial results, but will have to be improved before they can be an ideal means of education or entertainment.

The mother of the girl who has no adequate home for her social pleasures should know, also, what is being done to improve the dance halls. I do not mention these to advise them, but to arouse a public spirit which will appreciate the kind of halls girls go to and how they may be improved. The society which has investigated this institution—which like the movies, seems to be with us to stay—has made it illegal to sell drinks on the same floor with the dancing room and has started a few dance halls run under proper conditions. Let the mother know what kind of hall her daughter frequents and let other mothers try to foster the kind where folk dancing and dancing of the more formal type may be enjoyed because of sufficient protection.

There is one other institution which fathers and mothers who appreciate good books and pictures ought to suppress, and that is the comic page of the Sunday newspaper. Many parents would scorn to buy a book with such abominable illustrations as

used in the paper, although they allow their children every Sunday morning to pore over the silly and unmoral nonsense. I say *unmoral* advisedly. Only recently, a mother told me that she was sure her boys had played a naughty and unbecoming trick on their grandfather because she had allowed them to get interested in Foxy Grandpa. The boys like jokes, but these do not need to combine bad drawing with a tendency to corrupt the moral sense. There are many comic books with good drawings, published especially for children.

Do not think that all public institutions are of questionable repute. Pleasures that the girl or boy enjoys may be found at the recreation centres under the guidance of the board of education, at the settlements, at the Y. M. C. A. and Y. W. C. A. Folk dancing is often taught there. In addition, the boys may learn various entertaining and instructive crafts, such as Venetian iron work, leather and burnt wood, chair caning, and whittling; while for the girl, there is cooking, housekeeping, nursing, dressmaking and millinery, knitting and crocheting, embroidery and basketry. Some cities have arranged civic pageants and it would be encouraging if the New York schools or other organizations would patronize this method of communistic pleasures. There should be in the city, too, an increase in the number of boys' clubs where the boy can get the proper kind of "fun and feed," which someone has said to be the real object of such clubs. The eagerness with which children flock to the wholesome recreations makes us a little more optimistic with regard to the future. In these days of piano players, when five finger exercises do not seem so worth while either to the child or the mother, we must try hard not to forget that one's own power to amuse oneself is better than continual dependence upon the ready made fun.

I hope that my suggestions for suitable amusements seem sufficiently constructive. I want the children to have a good time. I want the good time to start in the home when the child is an infant. When the home cannot satisfy all his social needs, I want the parent to provide large free places for his child to play in; I want him to select a number of the best institutions to meet the demands of that particular growing child, so that *play* may do its share in developing him physically, mentally, and morally.

352 East 200th Street.

DISEASES INFLUENCING GROWTH.*

The Conditions Which Underlie Them.

By B. Raymond Hoobler, A. M., M. D.,
New York.

Anyone closely connected with hospitals and dispensaries where children are cared for, is at once struck by the large number of deformed and underdeveloped children who are growing or attempting to grow into manhood and womanhood within the confines of this great city. Even the untrained observer must notice the many wizened and structurally deformed bodies among the children on the playgrounds. It is my purpose to consider some of the underlying conditions which bring about this tendency to abnormality and lack of development.

At the present time we are devoting much thought to the study of the mentally defective. For the sake of our future citizenship, it is equally important that we consider as well the physically defective children. Therefore, the diseases and conditions which influence growth are worthy of our deep thought, for if we wish to perpetuate the sturdy Anglo-Saxon stock we must inquire into those conditions which make for the development of brawn as well as brain. In the progeny of the animal, bird, and fish world we find but very few imperfect specimens compared with the offspring of man. Therefore, it seems obvious that conditions which make for poor or imperfect development somehow must be related to our civilization.

For purposes of this study, the period of a child's development may be divided into two periods:

1. Growth which takes place during prenatal life.
2. Growth which occurs after birth.

Any discussion relating to diseases which influence growth must resolve itself into a study of nutrition and its disturbances, since it is only through proper nutrition that growth can take place.

GROWTH DURING PRENATAL LIFE.

But little attention has been given to the importance of prenatal growth. That the nine months after birth are highly considered is demonstrated by the many agencies for the care of the infant during this period. On the other hand, we are prone to neglect the child's welfare during the nine months in which it lies hidden from gaze, unable to offer even the mute appeal which the same child may make after its birth. The public conscience seems to awaken only after it has had the vision of the helpless, pleading little thing. The appalling record of the stillborn does not stir us to the same extent that statistics of infant mortality do. Why should it not? If actual death occurs to so many during prenatal period, must there not be influences at work which will hinder development throughout the whole life? Shakespeare appreciated this condition when he put into the mouth of the Duke of Gloucester, afterward Richard III, these words of lamentation concerning his deformed self:

> Why, love forswore me in my mother's womb;
> And, for I should not deal in her soft laws,
> She did corrupt frail nature with some bribe,
> To shrink mine arms up like a wither'd shrub:
> To make an envious mountain on my back,
> Where sits deformity to mock my body;
> To shape my legs of an unequal size;
> To disproportion me in every part,
> Like to a chaos or an unlicked bear-whelp
> That carries an impression like the dam.

This was not a figment of Shakespeare's imagination, for recent scientific experimentation has shown that certain influences are always followed by certain results. Take, for example, the matter of alcohol in its effect on the child before birth. Listen to these important and far reaching statistics which Stockard has gathered:

Of 104 children at whose birth either the father or mother was intoxicated, but fourteen were without some defect in their development.

*Read at open lecture before the Public Health Education Committee of the Medical Society of the County of New York, Academy of Medicine, January 8, 1913.

Twenty-one drunken females gave birth to 125 children, sixty-nine of whom died under two years of age.

Another instance which shows conclusively that alcohol caused the lack of development is found in the following case: A normal woman married a normal man and gave birth to three healthy children. Upon the death of her husband she married a drunkard and again gave birth to three children, two of whom were drunkards and one a dwarf. This husband died and the woman married a normal healthy man and gave birth to three children, all of whom were sound and properly developed.

Whether or not the drinking of alcoholic beverages contributes directly or indirectly to child mortality, it is nevertheless a pretty well established fact that the death rate among the children of those who drink continuously or periodically is greater than in the homes of the sober. Statistics reputed to emanate from the Galton Laboratory of Eugenics give the following figures covering the school children of Manchester, England; Edinburgh and Glasgow, Scotland:

The death rate among children born of sober mothers, 28.4 per cent.

The death rate of children born of mothers who drink continuously, 33.4 per cent.

The death rate of children born of mothers who drink periodically, 36.1 per cent.

Stockard has given further conclusive evidence that alcohol in one or both parents tends to improper development. He kept a series of small animals under the influence of alcohol and carefully controlled the mating. Of forty-two matings between these alcoholic animals, which normally should have produced 100 animals, but eighteen were born alive. Of these eighteen, only seven lived beyond a few weeks, and of these seven five were dwarfs.

In another experiment in which both animals were kept under alcoholic influence for a long period, only one living litter was born from fourteen matings, this litter consisting of but one animal, which died in convulsions on the sixth day.

Furthermore, this investigator has shown that not only alcohol but many other substances tend to influence growth of the germ cells. In the case of certain species of fish he found that by putting the eggs in a solution of a very common drug certain deformities could always be produced. In one experiment, by using a mild solution of the drug he could produce one eyed fish from ninety per cent. of the eggs, whereas without the drug 100 per cent. would have been born with two eyes. The drug used was the same one employed by many women during their pregnancy.

Many diseases caused by occupation, such as lead, zinc, and brass poisoning in one or both of the parents, are disastrous to their offspring. Of thirty-seven living births from parents one or both of whom were suffering from lead poisoning, twenty-two of these thirty-seven children died under three years of age.

Further statistics are not needed to prove that in many instances defects which are charged to heredity are not passed on down from ancestors, but on the contrary are due to the deleterious influence of drugs which may be taken by either parent before or at the time of conception or by the mother during her pregnancy.

Another source of defective development of the child during the unborn period is the type of nourishment furnished it by the mother. We are so much concerned, and rightly so, in having the mother feed the child properly the first nine months after birth that we are unloading the responsibility for proper feeding upon our boards of health and many allied organizations. We should, however, be just as anxious that the mother properly feed her child during its unborn period. It is well known how capricious is the appetite of a mother during such a period. For this very reason, there should be a widespread knowledge of the kinds of food needful for the mother that may furnish her child with the proper ingredients to foster a normal growth. The unborn period is the time when the infant grows the fastest, and hence is in the most imminent peril if certain types of nourishment are withheld.

Dr. J. R. Murlin has recently made a study of the food energy required by a mother before giving birth to her child, and also the combined energy required by the mother and child after birth. From his findings one may conclude that if the mother is properly to feed her child after birth, she must have her diet carefully supervised previous to the birth of the child, in order that it may contain proper portions of protein, fat, carbohydrate, and salts. Generally speaking, these elements are drawn on even at the expense of the mother's body, so that the child's development may not be hindered. However, even this benign plan of Nature fails under the continued influence of an inadequate or improper diet, particularly when accompanied by the deleterious influences of alcohol and drugs. Since any alcohol or drug which may be taken finds its way into the body of the unborn, a mother who would scorn to give a single drop of alcohol to her child after birth will unwittingly saturate its tissues with destructive poison before birth.

THE INFANT AFTER BIRTH.

I have just spoken of the necessary food requirements for growth before birth. The same types of food needed to develop a human being from a mere microscopical speck to the seven or eight pounds of robust, healthy boy or girl at birth are still required for the proper development of the child during its periods of infancy and childhood. The same food elements are requisite, but in varying proportions of protein, fat, carbohydrates, and salts in accord with the increasing age of the child.

Were our problem as simple as this illustration seems to indicate, there would be no need for the various organizations for reducing infant mortality. But just so surely as there are pitfalls in the path of the child during its nine months of unborn existence, so are there obstacles in its infancy and childhood periods.

The greatest of these pitfalls occurs when we deprive the infant of its natural heritage, viz., its inalienable right to be suckled at its mother's breast. Man's ingenuity has been exhausted, and still he has

not been able to find a better way than that provided by Nature. In all the long list of the animal kingdom which nurses its young, none has so grown away from Nature's methods as man. This is the product of our boasted civilization. How important for the unborn millions of the human race if only the old cry of "Back to Nature" could be realized in the feeding of our offspring.

There is no question of the inability of the great mass of mothers, not excluding the more intelligent ones, to feed their children in a proper manner, when either through sickness or by force of economic conditions or by willful desire the springs of maternal food are dried up before the child's digestive system is sufficiently organized to use the food elements which an overzealous but well meaning mother may thrust upon it. The greatest propoganda in the interests of the proper growth and development of the child is that which concerns itself with the education of the mother who from economic or purely selfish reasons permits the maternal milk supply to fail. Lacking this natural food, there is often developed in the infant a train of nutritional disturbances, the marks of which are practically never effaced throughout the entire lifetime.

If the nation desires large, well formed citizens, it must begin by guaranteeing that its infants shall be cared for by mothers who nurse their children or who know how to feed mixtures of cow's milk suitable in kind and quantity. No greater step in producing healthy and well developed citizenship has been taken than that of the New York board of health when it opened its Child Hygiene Department and still more recently added to its service the infant milk stations.

It is impracticable at this time to attempt an enumeration of the specific diseases which influence growth and development. These are for the medical profession to wrestle with. I do, however, feel my responsibility in outlining conditions which breed diseases which in turn work against true growth and development of the child.

I have already indicated what I believe to be the main underlying conditions causing diseases which influence growth. These conditions express themselves in many and varied forms of disease. Certain of the food elements which are usually well borne normally act as violent poisons under other circumstances; for example, certain sugars in the dietary of the infant. At times the child may be supplied with a perfect food for its age and weight, but it is unable to make use of such food for body building, and instead of growing, will continue to lose weight, producing the typical case of marasmus. In other instances the child becomes greatly emaciated because it cannot keep sufficient water in its body, even though it be given twice as much water as it should normally have. In other cases the bones become brittle and easily deformed owing to its inability to retain the mineral salts necessary to build bone, and there results the typical case of "rickets." The child's nervous equilibrium may become very unstable, due to the failure to utilize certain minerals necessary in the nervous structure of the body. Thus it will be seen that there are many expressions of disease due to a failure properly to make use of the food which under normal circumstances would foster growth and development.

There is also that great group of disturbances arising from infections to which the child is particularly susceptible. Following in the train of many of these infections, such as tuberculosis, pneumonia, infantile paralysis, and others, there are often a series of digestive disturbances which profoundly influence the nutrition. And thus is the vicious circle ever being circumscribed.

In order, therefore, that growth and development may properly take place, it is important that all nutritional disturbances of the infant and child be obviated. This can best be done through the following measures:

I. The modern child must be protected from the influences of deleterious drugs.

II. The prospective mother must be given sufficient care and freedom from economic stress so as to enable her to furnish her offspring with the proper food elements to build healthy tissue.

III. The mother must be encouraged to nurse her children as the best means of warding off nutritional disturbances.

IV. If the maternal milk supply fails, then the mother must be taught how to make up proper feedings of cow's milk mixtures.

If there can be guaranteed to the growing child suitable nourishment with abundance of open air and sunshine, then we may confidently expect to raise up a generation of healthy, well developed men and women.

131 East Sixty-seventh Street.

ACUTE ANTERIOR POLIOMYELITIS

Following Bite of Dog Infected with Rabies.

By Hubert B. Haywood, Jr., M. D.,
Raleigh, N. C.

Case. C. R., male, aged fourteen years. Mother living and well, father died of paralysis during middle life. As far as could be learned from the mother the cause of the paralysis was apoplexy. The family history was negative otherwise. The patient's previous medical history had been good. There had been no other sicknesses beyond those usual to infancy and childhood. He had always been healthy and well.

Two weeks previously he was bitten on the lip by a dog. The wound was two and a half inches long and extended down to the mucous membrane of the cheek. It received medical attention and healed up with very little difficulty and little pus formation. The dog was killed and the head sent to the Pasteur Institute in Raleigh for examination. It revealed the presence of the Negri bodies, and a diagnosis of rabies was made.

The patient came from his town to Raleigh for treatment promptly. He was put on treatment immediately on arrival and in all had received fifteen injections of the rabies serum up to the time of the development of acute symptoms of sickness. On the night of April 30, 1912, he was taken acutely sick with severe headache, pain in the neck, chill, and high fever. These symptoms came on following a cold bath.

On the next afternoon, in compliance with the request of Doctor Shore, director of the State laboratory, I called on the boy and found him suffering with severe headache, stiffness, pain in the neck, and inability to void his urine. He also had general muscular soreness. I catheterized him immediately and withdrew about twenty ounces of dark, highly colored urine. The urine showed a trace of albumin.

Physical examination was negative with the exception

of the presence of bronchovesicular breathing at the base of the right lung posteriorly. No râles and no impairment of note were found, however. His pupils were semidilated, equal, and responded to light and accommodation. The knee jerks were absent on both sides. A partial Kernig's sign was present. There was no Babinski sign and no ankle clonus. The abdominal muscles were rigid, and the respirations were rather of the diaphragmatic type and jerky in character.

A leucocyte count showed the presence of 18,000 white blood corpuscles. There were seventy-five per cent. of polymorphonuclear cells. The patient was removed to Rex Hospital on the same day.

On admission his temperature was 100° F., pulse 100, respiration 20. A culture was taken from the patient's nasal mucous membrane and an almost pure culture of diplococci obtained.

By the next morning there was an almost entire paralysis of both arms and hands. By the afternoon there was a beginning paralysis in both legs. This was complete by the next morning. There was a complete absence of the patellar reflex on both sides. He had a marked Kernig's sign on both sides and a *tâche cérébrale*. His pupillary reflexes remained normal. The patient suffered such severe pains in the head and neck that they could be controlled only by the hypodermic administration of morphine. A diagnosis of acute anterior poliomyelitis was now made. A lumbar puncture between the fourth and fifth lumbar vertebra was done and about ten c. c. of clear cerebrospinal fluid withdrawn. It was cultured on blood serum agar and found to be free from microorganisms.

Within a few hours' time the patient had great relief from pain and by the next morning there was slight recovery in the use of the right arm and hand. From this point on recovery was marked. He first regained use of the right arm and hand and then of the left. Next the right leg showed some signs of recovery and then the left which was slower. The peroneal groups of muscles in both legs were much slower to regain tone than any of the others. About the sixth day of his illness a well marked Babinski sign developed. About the tenth day he showed a slight patellar reflex in the right leg. It appeared a couple of days later in the left.

At this stage of his disease, while apparently making a perfect convalescence, a most severe pain in the lower left quadrant of his abdomen developed. His temperature went up to 103° F. from normal, and he seemed quite sick. On the next day the whole limb was quite swollen, and he had all the evidences of a well marked phlebitis extending into the left external iliac vein.

The supposition that the patient's limb or side had been subject to traumatism and the walls of the vein injured during the course of a hot tub bath which he had been receiving daily was probably correct. Baths were now discontinued. Under complete rest, elevation, and the application of an ice bag to the side, the swelling and inflammation subsided in ten days.

During the course of his sickness he received seven and one half grains of hexamethylene tetramine every four hours and hot tub baths every four hours. After the first few days he was on a soft diet. He regained control over his bladder on about the twelfth day of his sickness. Up to that time he had to be catheterized. He had partial incontinence of his bowels on leaving the hospital.

He had learned how to walk and had entire control of his arms. His grip was strong in both hands. The patient was discharged from the hospital on June 1, 1912.

A letter from his mother, August 19, 1912, states that he is able to walk around the house. He has not regained his strength entirely. Sometimes he will fall as if he has been shot. She does not state whether he is unconscious or not. His left limb is still swollen somewhat. Nothing has been heard from him since this letter.

The case is presented on account of the fact that the history was interesting in that the attack came on following a bad bite by a dog infected with rabies and during the course of the Pasteur treatment.

218 New Bern Avenue.

THE INJECTION OF SALVARSAN.

Advantages of the Use of a Blunt Needle.

By Robert Ormsby, M. D.,
New York.

A great deal has been written about the injection of salvarsan and neosalvarsan, a great deal of "flub-dub" has been uttered in regard to it, and explanations that did not explain have been written in periodicals and textbooks about the technic required. The fact of the matter is that all that is necessary is to see, in the first place, that no acid preparation is injected, and, in the second place, to be perfectly sure that a counteropening is not made in the distal side of the vein operated upon.

Professor Ehrlich himself has provided a perfectly safe remedy against the first mentioned danger, i. e., neosalvarsan, which is alkaline and does away with any fuss about rendering the acid preparation, salvarsan, neutral or alkaline before it is injected. I invariably use neosalvarsan either intramuscularly or intravenously, as it is without doubt the safer remedy.

In regard to the second danger, i. e., causing a counteropening in the vein or even wounding the vein, this is easily eliminated by using a blunt pointed needle for injection. Any ordinary needle that can be used for intramuscular injections of mercury may be used for the purpose by simply breaking off the point and grinding down the remaining portion till it is polished and smooth.

You ligate the arm, and when a vein is sufficiently distended, take a sharp pointed bistoury and nick it across. When you have divided the vein, insert your blunt pointed needle, which you have completely filled with warm saline solution, remove your ligature above the elbow, and open the clamp on the tube leading to the vessel containing the saline solution.

The use of a blunt needle eliminates the second danger in the operation, and also enables the surgeon to perform the operation without any assistance, as the patient cannot injure himself by any motion he may make, and the surgeon is perfectly secure because he knows that, no matter what direction the needle takes, it cannot injure the vein.

All other particulars in the operation are just the same as usual, but I contend it is a wise proceeding to eliminate any and all dangers which might attend the administration of this great blessing to mankind, Ehrlich's remedy.

368 Lexington Avenue.

Therapeutic Notes.

Treatment of Appendicitis in Children.—Green, in the *Practitioner* for October, 1912, discussing the operative treatment of these cases, asserts that in acute cases seen within the first forty-eight hours an operation should be performed at once, if possible. In cases seen later than forty-eight hours, the same course should be adopted if the patient is getting worse, the pulse rate rising, the area of pain and tenderness increasing, and the tongue becoming dry, foul, and furred, or if per-

foration takes place and there are signs of developing general peritonitis. If, on the other hand, the disease is abating, surgical treatment may be delayed until all signs of active inflammation have disappeared, i. e., until about two or three weeks after subsidence of the pulse and temperature. Careful watching is meanwhile necessary, to permit of operating immediately in case acute symptoms return. The use of purgatives by the mouth should be strictly forbidden, the patient kept quiet in bed with his shoulders raised, and no food given by the mouth except albumin water and water in small quantities. Nourishment should be given by enemata and saline injections; Ochsner's starvation treatment cannot very well be applied in children, as they become restless. In cases of appendicitis in which an abscess has been found to exist, the latter should be evacuated as soon as possible.

Treatment of Constipation in Chlorosis.—Abel Gy, in *Quinzaine thérapeutique* for November 10, 1912, states that before treating constipation in chlorotics, it is necessary first to ascertain precisely the relationship existing between the chlorosis and the digestive disorder. Either of these may be primary.

Where the chlorosis is the ultimate cause, it should receive the greater share of attention. The following combination, originally advised by Robin, should be prescribed for laxative purposes in these cases:

℞ Ferri et potassii tartratis } āā gr. ¾ (0.05 gramme);
Rhei pulveris, ...}
Cinchonæ pulveris, ...gr. iss (0.10 gramme).
M. ft. in pilulam No. I. Sig.: Two or three pills to be taken before the midday or the evening meal.

Where the digestive disorder is primary, iron is worse than useless. The condition may be associated with either hyperchlorhydria or hypochlorhydria, but fermentative processes are always present and demand appropriate drug medication. Senna and jalap should also be used as required, and in order to improve the general condition, a mixture of glycerophosphates with tincture of nux vomica and pepsin, as advised by Robin, may be administered. It is to be borne in mind, however, that excessive medication with iron containing preparations intended to "build up" the patient may exert an effect the opposite of that desired, constipation even more marked being the result.

Cases of "pseudochlorosis" or anemia in children also occur in association with constipation. In these little patients, excess of meat in the diet accentuates the trouble, and measures such as the administration of cinchona, meat juices, or raw meat do positive harm. Frequently the disorder will completely subside when mild laxatives have been given and the proteins in the diet greatly reduced.

Treatment of Leucorrhea.—Plique, in *Bulletin médical* for August 3, 1912, states that in some cases of leucorrhea in young girls bathing in tepid alkaline water containing, e. g., one half pound (250 grammes) of sodium carbonate, or local washings with a one per cent. borax solution, or, if the inflammation is severe, with a two per cent. decoction of althea root, may suffice to give relief. In women in whom these measures are not promptly effective, douching should be advised, either with normal saline solution, if there is no inflammatory process locally, or with the borax solution above mentioned, or a one per cent. decoction of saponaria root. Where greater astringency is necessary, injections of oak bark (five per cent.), krameria (three per cent.), or eucalyptus (one per cent.), with sodium borate added, may be used. For very obstinate cases a 0.5 per cent. solution of copper sulphate, one per cent. solution of lead acetate, or the following combination, recommended by Pringle, may be used:

℞ Zinci sulphatis, ... } .... .āā ʒiiss (10 grammes);
Aluminis exsiccati, }
Aquæ, ...Oi (500 grammes).
Fiat solutio.

Where more or less odor attends the leucorrheal discharge some preparation containing sodium hypochlorite should be used.

For tampons some such solution as the following should be used:

℞ Acidi tannici. .....ʒiiss-v (10 to 20 grammes);
Glycerini, ...}
Aquæ destillatæ, .. } .....āā ℥iss (50 grammes).
Fiat solutio.

In the presence of herpes or irritation, powders containing zinc oxide, bismuth subnitrate or subsalicylate, or calomel, are often more effectual than moist dressings. Thus the following powder may be used upon a clean cloth, to be placed between the labia:

℞ Talci pulveris, ...ʒiiss (80 grammes);
Bismuthi subnitratis, ...ʒv (20 grammes);
Acidi tannici, ...gr. lxxv-cl (5 to 10 grammes).
M. fiat pulvis.

If the powder fails to subdue the irritation, an ointment may be employed:

℞ Acidi tannici, ...ʒiiss (10 grammes);
Amyli, ...}
Petrolati, .. } .....āā ℥i (30 grammes).
M. fiat unguentum.

In each case of leucorrhea a search should be made for some local or general causative condition, such as hemorrhoids or constipation, pin worms, an unclean or rough pessary, in young girls especially chlorosis or scrofulous chloroanemia, and in older patients more particularly diabetes and uterine cancer. The removal of the cause is obviously indicated, if it is found.

Treatment of Typhoid Fever in Children.—Deléarde, in *L'Echo médical du Nord* for August 18, 1912, states that where, as is very often the case in children, constipation is present in typhoid fever, it is advisable to administer a mild laxative, such as castor oil in teaspoonful doses every other day, or a little magnesia, or again, an infusion of from five to eight senna leaflets in very weak tea, sweetened or flavored with orange flower water.

Diarrhea should not be interfered with unless the number of stools exceed five or six in a day, when the following combination may be given:

℞ Phenylis salicylatis, ...gr. iii (0.2 gramme);
Sodii boratis, ...gr. iss (0.1 gramme).
Pone tales cachetas No. x.
Sig.: Three cachets daily.

Where the child cannot swallow cachets, four grains (0.25 gramme) each of benzonaphthol and

sodium bicarbonate should be taken as a powder in a little sweetened water, four times daily.

To combat high fever the author advises the careful practice of cold colonic irrigation through a double tube.

In severe cases with pulmonary or cardiac complications, two classes of measures are especially indicated: 1. Counterirritation over the thorax. This should be instituted by mixing some mustard flour with water, spreading the resulting pasty mass over a piece of muslin, and applying the latter over the entire thorax. Employed daily for ten or fifteen minutes, this measure will bring about pronounced rubefaction if the mustard flour is of good quality, without excoriating the surface, and will lower the temperature slightly.

2. Remedies to support the heart are also of importance, as the condition of this organ may be a source of danger even where the complications are essentially pulmonary. The drugs to be employed to tone up the heart muscle in children are, in the order of their power, camphorated oil, sparteine, strychnine, and finally epinephrine. The first may be injected in doses of one c. c., four times a day, in children five years of age or upward. Sparteine may be combined with strychnine:

℞ Sparteinæ sulphatis, ...gr. viiss (0.5 gramme);
Strychninæ sulphatis, ...gr. 1/12 (0.005 gramme);
Aquæ destillatæ et sterilisatæ, ...ʒiiss (10 c. c.).
M. ft. solutio.

Of this solution 15 minims (one c. c.) should be injected daily. Strychnine is to be avoided, however, in children less than five years of age. Where the vascular tension is low and the pulse rate reaches 160 to 180, epinephrine should be given. One to two c. c. of a one to 10,000 solution should be injected once daily; or twice in grave cases.

Treatment of Acne.—Gaucher, in *Paris médical* for October 12, 1912, is credited with the following lotion for acne:

℞ Sulphuris præcipitati, ...gr. lxxv (5 gramems);
Talci pulveris, ...gr. xxx (2 grammes);
Glycerini, ...ʒii (60 grammes);
Aquæ rosæ, ...ʒiv (120 grammes);
Tincturæ quillajæ, ...ʒiiss (10 grammes).
M. ft. lotio.

Treatment of Constipation in Presence of Hemorrhoids.—*Paris médical* for August 10, 1912, advises that a mixture of washed sulphur, two parts, and honey, one part, be prescribed for use every morning in the dose of one teaspoonful. This may be given for a few consecutive days, then intermitted, and later begun again as required. Sée is credited with a mixture of equal parts of washed sulphur, potassium bitartrate, and magnesium oxide, to be taken in the evening, before retiring, in doses of one teaspoonful in a little water.

Treatment of Chancroidal Lymphadenitis.—A. F. Henken, in *Semaine médicale* for January 1, 1913, is stated to have found the following method promptly effective in the inguinal glandular enlargements accompanying chancroid: After appropriate general toilet and disinfection of the affected area, an incision, from one to 1.5 centimetre long, is made at the point of greatest fluctuation. A Bier cup is then applied, and allowed to remain ten or fifteen minutes. Next a twenty per cent. iodoform emulsion in glycerin, well stirred, is introduced into the abscess cavity in sufficient amount to fill it. Finally, the incision is occluded for five minutes by means of cotton dipped in mercury bichloride solution, in order that the emulsion may penetrate to the farthest recesses of the cavity, and a wet, nonocclusive dressing is then applied. This procedure is carried out three times, on successive days. On and after the fourth day, when the discharge is already greatly reduced in amount and is losing its purulent character, the treatment is limited to the application of the Bier cup and the insertion of a gauze wick. The cupping is continued until the seventh or eighth day, even if there is no discharge. On the ninth day, recovery is complete.

The only disadvantage of the method is that fever and local pain occur three or four hours after the first iodoform injection. By the next morning, however, this has all subsided, and the total amount of inconvenience is far less than in cases treated by wide incision and packing with gauze, in which, moreover, according to the author, the average period required for a cure is forty-one days.

Treatment of Chilblains.—The following solution is recommended in *Paris médical,* November 23, 1912, for application to chilblains:

℞ Tincturæ iodi, ..} .....āā ♏xv (1 gramme);
Tincturæ opii, . }
Glycerini, ...ʒi (30 grammes).
Misce.

Ointments such as these may also be used:

℞ Ichthyolis, ...gr. xv (1 gramme);
Adipis lanæ hydrosi, ...ʒiiss (10 grammes).
Ft. unguentum.

Or,

℞ Linimenti camphoræ, ...gr. xv (1 gramme);
Adipis lanæ hydrosi, ...ʒiiss (10 grammes).
Ft. unguentum.

In the presence of ulceration, silver nitrate, balsam of Peru, or tannic acid, may be applied, and a thick layer of cotton placed over the affected area.

Treatment of Hepatic Colic.—A. Robin, in *Paris médical* for November 16, 1912, is credited with the following combination for use in hepatic colic in cases without vomiting:

℞ Potassii bromidi, ...ʒiss (6 grammes);
Morphinæ hydrochloridi } .āā gr. ¾ (0.05 gramme);
Extracti belladonnæ foliorum, ... }
Ætheris, ...♏xii (0.6 gramme);
Syrupi, ...} .....āā ʒv (20 grammes);
Aquæ, ...}
Aquæ laurocerasi, ...ʒiiss (10 grammes).
M. Sig.: One tablespoonful halfhourly, up to three or four doses.

Gilbert in the same condition administers enemas consisting of antipyrine, 7.5 grains (0.5 gramme), dissolved in 5 ounces (150 grammes) of water, with 30 to 40 drops of laudanum added. If the pain is not quieted by the first enema a second is given two hours later.

Pouchet advises:

℞ Chlorali hydrati, ...gr. xxii (1.5 grammes);
Glycerini, ...} .....āā ʒi (30 grammes);
Syrupi, ...}
Aquæ chloroformi, } .....āā ʒxiii (50 grammes).
Aquæ destillatæ, ..}
M. ft. solutio.

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A NEW CONCEPT OF LIFE.

In admiring the work of Carrel, his fineness of technic, and ability to overcome operative obstacles, one is very likely to overlook its important bearing on our concept of life. We formerly were taught that life rested on a tripod, the legs being the respiratory, the circulatory, and the nervous systems. It was through the intimate correlation of these three that life, not only in the aggregate, but in the cell unit, was able to continue and perform its function. If any one of these supports was removed there occurred death, by asphyxia, syncope, or coma, according to which no longer functioned. The signs of death were considered to be well marked, although it was freely admitted that all tissues did not cease their activity immediately when cessation of somatic life took place. The more highly specialized the cell, the less able was it to lead an independent existence. As it became more and more developed along certain lines, the less became its purely vegetative ability.

Associated with this idea of life was the feeling that the controlling influence in the carrying on of the cell duties was an intangible something, called vital force or dynamic agent. That this element was not essential became evident when the investigator first was able to cultivate living tissue outside of its normal environment. At the start the tissues were transplanted to a living animal of a similar type. That method was obviously open to many objections, but what could be said when such living cells were grown in the test tube away from all three elements of the vital tripod? Take into consideration the work of recent investigators, of whom Carrel is the chief. A portion of connective tissue is removed from a living body, it is placed in very abnormal surroundings, moisture and heat are supplied in proper amount, as well as food, and what happens? These cells multiply and tend to increase greatly. Ebeling has shown that they may grow actively outside of the living organism for more than eleven months. The mass may increase considerably, and the power of proliferation, after such a long period, is more active than at the beginning of its life *in vitro*. Even such highly organized structures as nerve cells will not only live, but, if supplied with a supporting framework, will form axis cylinders. But portions even of a complex organ such as the heart can carry on an extracorporeal existence. Carrel has succeeded in preserving cardiac muscle from the chick embryo for as long as one hundred days, at the end of which time the cells were carrying on their rhythmic contraction.

With this evidence before us, it becomes necessary for us to modify our views. If a tissue can grow and carry on its function, to limited extent at least, when the entire tripod has been removed, what then is the energy that activates it? Is it merely the result of an original impulse that supplies an indefinite energy, or is the higher animal actually but little more than a congeries of practically independent entities associated for mutual welfare? It is evident that the central nervous system is not an absolute essential as formerly thought. When Carrel removed the viscera from one of the lower animals and, with the assistance of artificial respiration, kept those organs living and functioning for many hours, he upset many preconceived ideas. If a few cells can be kept living for months and the entire viscera for hours, where is the limit to be drawn? Even if as yet we cannot artificially produce life, are we going to reach the point where life may be maintained indefinitely?

BUTTER VERSUS OLEOMARGARINE.

A comparison of the food values of butter and oleomargarine shows them to be for practical purposes the same. Aside from the chemical differences in the component fats, the essential difference

between the two lies in the fact that butter represents milk fat, while oleomargarine is a mixture of meat and vegetable fats, the oil being expressed from the fat capsules, emulsified, and pressed. Oleomargarine at present therefore offers a food very similar to butter and at about one half the retail price of the latter. Here is a strong economic argument for its use in families where the excessive cost of butter prevents its being used to the extent that it should be as an article of nutrition. But this does not tell the whole story.

In the sixteenth annual report of the Department of Agriculture (for the fiscal year 1912), Secretary Wilson points out some striking results of an investigation of buttermaking and creameries conducted by his department. Reports were received during the year from 1,500 creameries, and a large percentage of the cream received by them was found to be very inferior and much of this entirely unfit for food. Of 5,154 lots of cream examined through the year, sixty-one per cent. were found to be dirty, decomposed, or sour; 94.5 per cent. of the creameries investigated were more or less insanitary, and only twenty-seven per cent. of them practised Pasteurization. The report recommends a complete system of inspection of dairy products and a systematic grading of cream and milk. It is evident that while great attention has been paid to the production of a clean milk supply, especially for cities, this closely related field has been sadly neglected. Butter made from cream which is impure, decomposed, or infected with pathogenic germs, is a dangerous menace to health, and while the infant population is not so much affected, it has great possibilities for damage in older persons. Here again, oleomargarine has an advantage in that the process of manufacture is almost certain to sterilize the product, which is not the case with butter.

The report of Secretary Wilson gives the results of work undertaken by the dairy research laboratories of the department on the manufacture of butter for storage. These results show conclusively that butter made from sweet Pasteurized cream has far better keeping qualities than butter made in the usual way. Pathogenic germs may exist for a long period in butter made from nonPasteurized cream. Pasteurization has thus an evident value in safeguarding the health of the consumer in addition to its economic advantage of greatly improving the keeping qualities of the butter. Butter made without the use of a "starter," from Pasteurized sweet cream, and sealed in tin cans, will show very slight deterioration and practically no objectionable flavor after storage from eight to ten months. This conclusion was based on the observation of the manufacture of 2,000,000 pounds of butter during the last three years.

It is surprising to find that less than ten per cent. of the butter made in this country is of first quality. The Department of Agriculture, through its trained creamery experts, is making a thorough investigation to determine the causes for this condition. It is of interest to note that a large amount of butter which becomes rancid is sent to renovating factories and again placed on the market. If made under sanitary conditions, this "process" butter is wholesome, though not up to the mark of the best creamery butter. The law requires it to be labelled true to name.

The quality and conditions of manufacture of oleomargarine are specified by law. In view of the conditions here described, butter should receive similar attention.

SURGICAL TUBERCULOSIS AND ITS TREATMENT BY TRYPSIN INJECTIONS.

One of the most satisfactory features of the treatment of tuberculosis developed in recent years, has been the steady relegation of the knife to the background in the management of the localized forms of the disease. To Bier in Germany, Garré and Calot in France, and others, we owe this marked advance—a forecast perhaps of what the future holds in reserve in most disorders now treated by extirpation of an organ through our ignorance of suitable medicinal measures to prevent the sacrifice. Of fundamental importance in this connection has been the emphasis laid by Bier upon the curative efficiency of antibodies in local disorders, the *deus ex machina,* in fact, of his treatment by surgical hyperemia. This might now be said also of the view first advanced in this country ten years ago, that trypsin had to do with systemic bactericidal and antitoxic processes, not only as the proteolytic agent of the digestive vacuole of phagocytes, Metchnikoff's cytase or "trypsinlike ferment," but also as a constituent of the plasma when a bactericidal process is active therein. Beard's advocacy of trypsin in cancer met with signal failure, as is well known; yet the widespread use of this ferment, in the form of the *injectio trypsini* at least, demonstrated that it could be injected without danger of ill effects.

Bier's clinic has recently contributed another promising step in the treatment of localized surgical disorders. Wilhelm Baetzner found (*Practitioner,* January, 1913) that injections of trypsin gave better results than the methods in vogue, while

being devoid of danger to such a degree that outpatients could be treated with it, the American *injectio trypsini* referred to above having given the best results among the various preparations tried. Containing as it does sixty per cent. of glycerin, however, it had to be diluted with sterile saline solution in the proportion of five parts of the latter to one of the former. One ampoule containing one cubic centimetre (fifteen minims) of the solution was injected subcutaneously under strict aseptic conditions into the diseased area, from one to three times a week, according to the needs of the case and until a definite change for the better was observed. Where tuberculous abscesses were present, the site of injection was anesthetized with ethyl chloride and the trocar driven into the abscess obliquely, avoiding reddened patches. Where sinuses existed the injections were made into the surrounding parenchyma and the sinus itself. In tuberculosis of the joints, from one to two cubic centimetres were injected partly into the joint and partly into the surrounding tissues at intervals of from six to eight days, or oftener if the case permitted. Here, however, the *injectio trypsini* was introduced pure, the local fluids being depended upon to dilute it. Even where local changes had not yet occurred, though threatening, the pain was lessened or arrested; where discharge and night sweats were present, they were also decreased. A marked improvement of the appetite occurred, which contributed materially to the progress of the case.

The treatment was found to be indicated in cases in which iodoform glycerin is usually recommended. Trypsin diffuses slowly through the tuberculous tissues and seems to possess a definite curative action. It is selective for fungoid purulent masses and favors the production of healthy granulations, causing disappearance of the tubercle bacilli.

PRESCRIPTIONS BY TELEPHONE.

In view of the lack of written evidence, it is difficult to fix positively responsibilities for errors in prescriptions which have been telephoned by the physician to the pharmacist. The use of the telephone offers so many advantages that it seems impracticable to interdict it; but when communicating prescriptions to pharmacists by telephone the physician should take unusual precautions to insure his patient against possible misunderstanding. The medical and pharmaceutical associations of Copenhagen have jointly proposed to the board of health that the use of the telephone in transmitting prescriptions should be permitted only for short distances and in exceptional cases, and have suggested that the following procedure should be observed: The doctor must write out his prescription and then telephone it in Latin. No one except a qualified pharmacist shall be permitted to take down the telephoned prescription. On receiving such a prescription, the pharmacist must write out the entire prescription, including the name and address both of the doctor and of the patient. He must then read it out to the doctor over the telephone. All telephoned prescriptions must be copied in a special book by the pharmacist. Immediately after telephoning the prescription, the doctor must send a written prescription to the pharmacy. This written prescription must be kept in the book, together with the copy taken down from the telephone by the pharmacist. In the case of a simple solution of morphine, of cocaine, or of tincture of opium, not more than double the daily dose may be dispensed on the telephoned prescription. These suggestions, being drawn up jointly by the associations of physicians and pharmacists, deserve careful consideration. Indeed, they seem adequately to safeguard the use of the telephone for the transmission of prescriptions; but even with such safeguards there is always a possibility of an error. We should add, as a further precaution, the requirement that the age of the patient, except in cases of adults, and the directions for taking must be given in full. Some such method of procedure should be adopted voluntarily by physicians out of regard for the safety of their patients. If not adopted voluntarily, it seems quite probable that safeguards in this direction will be imposed by the legal authorities in view of the increasing use of the telephone in conveying prescriptions to the pharmacists.

FAILURE OF ANTITETANIC SERUM.

Potherat, at the meeting of the Paris Société de chirurgie on March 19th, told of a patient, aged fifty-eight years, who suffered from a compound fracture of the leg. The wound was carefully cleansed and set in an apparatus permitting of daily dressing. It was only on the day following that the man received an injection of ten c. c. of antitetanic serum. For several days the temperature remained at 102.5° F., although there was no suppuration. Sloughing ensued, however, and demanded enlargement of the wound with removal of splinters of bone. On the evening of the fifth day the patient had convulsions, and died, on the sixth day, of tetanus. Therefore, remarked Potherat, according to *Semaine médicale* for March 26, 1913, the serum had no effect; was this on account of the delay in injecting it? Proper disinfection of the wound was also delayed.

Thierry, in commenting on this case, remarked that tetanus, if infection had taken place, was inevitable, serum or no serum, and he added that in his service none was ever administered. Wounds

were carefully disinfected with zinc chloride, and this treatment he had found perfectly satisfactory. This conclusion differs from that published in our issue for April 5th, page 715.

DANGEROUS SIMILARITY IN NAMES.

Manufacturers of medicinal preparations are coming to depend more and more on the trademarking of coined names as a means of protecting their proprietary rights. Since trademark rights cannot be established for descriptive names, the manufacturers are compelled to exercise much ingenuity in inventing names which, while not descriptive, are suggestive and at the same time easily remembered. Owing to the rapid increase in the number of such names there is great danger of confusion. This was pointed out at the meeting of the American Pharmaceutical Association, two years ago, and was referred to recently in an address by Dr. Hans Arzberger, director of the pharmacy in the Vienna general hospital. He gives a list of preparations which have the same or very similar names, though differing entirely in composition, uses, and in some cases dose. As one means of guarding against errors due to this similarity, as well as errors arising from faulty abbreviations or poor chirography, Doctor Arzberger protests against the use of the words "as directed," urging physicians to write out the directions for taking, not only for the information of the patient, but as a guide to the dispenser.

THE BULLETIN OF THE WOMAN'S HOSPITAL.

The second issue of the *Bulletin of the Woman's Hospital,* dated January, 1913, was published very recently. This *Bulletin* is furnished for free distribution and will appear at irregular intervals. The scientific articles are written by members of the surgical staff and are based upon observations made on the work in the hospital.

News Items.

Harvey Society.—The annual meeting of this society will be held at the College of Physicians and Surgeons, 437 West Fifty-ninth Street, New York, on Friday evening, April 18th.

Dr. Tait Mackenzie Honored.—*Paris médical* for March 15th reproduces a photograph of Tait Mackenzie's magnificent statue, the Boxer, which was on exhibition at the International Congress of Physical Education in Paris, March 17th to 22d.

A Merger of Medical Colleges.—The union of the University of Maryland medical department and the Baltimore Medical College is assured, the faculties having agreed on the terms. Members of the faculty of the latter institution will retain their positions in the new school and three of them will become members of the university board of regents.

Supreme Court Decision in X Ray Suit.—The Supreme Court of the United States in the first decision ever rendered concerning x rays decided on April 8th that in suits to recover damages from x ray burnings the plaintiff must prove negligence on the part of the physician or operator, who is not compelled to prove that he was not negligent.

Bills of Medical Interest before the Pennsylvania Legislature.—In addition to the Smith bill to reform hospital charity abuse and the Alter bill against medical frauds, the physicians of Pennsylvania are asked to interview representatives and senators to obtain their active support of the Richards bill restricting the sale and dispensing of narcotics, the Steel bill forbidding the marriage of the unfit, and the Steel bill amending the law for reporting infectious diseases by including syphilis and gonorrhea, with the initials of those infected.

Meetings of Medical Societies to be Held in Philadelphia during the Coming Week.—Tuesday, April 15th, North and West Branches of the County Medical Society, Stomach Hospital Gastroenterological Society, and the Philadelphia Laryngological Society; Wednesday, April 16th, Quarterly Business Meeting of the County Medical Society, and the Section in Otology and Laryngology of the College of Physicians; Thursday, April 17th, Northeast Branch of the County Society, and the Section in Ophthalmology of the College of Physicians; Friday, April 18th, Southeast Branch of the County Society and the Jefferson Hospital Clinical Society.

Walker Cocaine Bill Passes Assembly.—The Walker cocaine bill, drafted by the assistant district attorney of the city of New York, and modified after a conference with the Medical Society of the County of New York, passed the Assembly on April 8th by a vote of 106 to 18. Doctor Brush and Doctor Volk, both members of the Assembly, voted against the measure. Mr. Walker made an earnest plea for the passage of the bill, saying that it would not really hamper physicians in the honest practice of medicine, and he felt that such a measure was necessary in order to prevent the distribution of the drug for illegitimate purposes. The bill has not yet passed the Senate.

To Test Endurance of Automobile Ambulances.—Arrangements have been made to conduct an endurance test on May 5th of the automobile ambulances at the Walter Reed General Hospital, Washington, D. C., under the direction of Major Paul S. Halloran, of the Medical Corps of the United States Army. It has been proposed that each ambulance company be equipped with four motor ambulances and four horse drawn ambulances, until it shall be demonstrated which type of vehicle is best suited to the service. The endurance test is a part of the plan of the surgeon general of the army to ascertain the value of automobiles in relation to medical department transportation.

Physicians Organize to Aid Colleagues in the Flood District.—At a meeting held in the City Hospital of Cincinnati, March 28th, a committee was appointed for the purpose of soliciting contributions to assist members of the medical profession who were victims of the recent disaster. Physicians everywhere gave their services willingly to the sufferers, and now many of them are practically penniless, having lost, not only their homes but their office equipment. The committee is composed of Dr. Joseph Ransohoff, Dr. John C. Oliver, and Dr. Charles E. Caldwell. Doctor Caldwell has been appointed treasurer, and all contributions should be sent to him, at the office of the *Lancet-Clinic,* 648 Main Street, Cincinnati.

Personal.—Dr. H. H. Crum, health officer of Ithaca, N. Y., has been appointed one of the lecturers in the State health educational campaign.

Dr. Lunsford D. Fricks, of the United States Public Health Service, has gone to Montana to carry on the fight against Rocky Mountain spotted fever, which recently caused the death of Dr. T. B. McClintic.

Dr. Flavel B. Tiffany, of Kansas City, Mo., is making a tour of the world, visiting the eye and ear clinics of the principal hospitals and colleges. While in India he made a special study of the Indian operation for cataract, with the originator, Colonel Smith, of Bombay.

Measles in Pittsburgh.—Surgeon Stoner, of the United States Public Health Service, has stated regarding the outbreak of measles in Pittsburgh that during the week ending March 29th there were 358 cases and 5 deaths reported; during the week ending March 22d, there were 359 cases, with 5 deaths. From November 1, 1912, when the epidemic began, to March 29, 1913, there have been reported a total of 7,747 cases, with 112 deaths.

Defining Unprofessional Conduct.—A bill introduced into the Senate of the State of New York by Doctor Seeley, known as No. 793, defines unprofessional conduct and gives considerable discretion to the board of regents in relation to the revocation or suspension of license to practise of any physician found guilty of unprofessional conduct, which is defined as including the following: Advertising to cure chronic and incurable diseases, the employment of solicitors to obtain patients, offering services free unless a cure is effected in incurable diseases; wilful betrayal of professional secrets, habitual drunkenness or addiction to drugs, dividing or promising to divide a fee without the knowledge of the patient or person paying the fee, or any action detrimental to health and morals. The bill has been amended since its first introduction, and a clause permitting wide discretion in the revocation or suspension of licenses has been eliminated.

Alabama Medical Society.—The annual meeting of this organization will be held in Mobile on April 15th, 16th, and 17th, under the presidency of Dr. H. T. Inge, of Mobile. The address of welcome will be delivered by Dr. Rudolph H. von Ezdorf, president of the County Medical Society. The annual address of the president will be delivered at the first session, and will be followed by reports from Dr. Martin L. Malloy, of Eutaw, first vice-president, Dr. H. W. Blair, of Sheffield, second vice-president, Dr. J. Norman Baker, of Montgomery, secretary, and Dr. Henry G. Perry, of Montgomery, treasurer. The afternoon session of the opening day will be devoted to clinics.

Malarial Fevers in Alabama.—Passed Assistant Surgeon R. H. von Ezdorf, United States Public Health Service, has presented in a recent issue of the Public Health. Reports a comprehensive study of the prevalence and geographic distribution of malaria throughout Alabama during the year 1912. Circular postal cards were mailed to 2,099 physicians in the State on December 1, 1912, calling for certain information regarding cases of malarial fevers occurring in their practices during the month of November, and 431 replies were received. A summary of these reports showed a total of 3,319 cases reported, or an average of 7.7 cases for each physician reporting. The total number of deaths from malaria in the State for the whole year was 546, 313 colored and 233 white. The seasonal prevalence was the same as for the two preceding years, the number of deaths being smallest in the months of January, February, and March, the largest being in August, September, and October. The reports showed that 43 per cent. of the total deaths from malarial fever occurred during the first two decades of life. Seven counties gave a report of no death from malarial fever during the year, and of these, two, namely Clay and Winston, gave no report of death from malaria during the years 1910, 1911, and 1912.

In Memory of John Shaw Billings, M. D., LL. D.—Dr. A. Jacobi read the following resolutions at the New York Academy of Medicine, April 3, 1913: The death of Dr. John Shaw Billings has robbed America of one of its greatest men. This New York Academy of Medicine, of which he was an honorary member, the representative and headcentre of medical endeavors in New York, is anxious and eager to honor itself by extolling a man who was so prominent in many fields of knowledge, research, and activities, that each of them would have secured his immortality both in medical and general history. Indeed it is mostly to mere specialistic learning and labor that many of our famous men owe their deserved renown.

Doctor Billings began his life as a demonstrator of anatomy in a Western college. In the Civil War he served the country as a surgeon, and finally as a medical inspector of the Army of the Potomac. He then set out to develop the scanty library of the surgeon general's office established by William A. Hammond. A few years of hard work on the part of Billings and the liberality of Congress made the library grow, so that in 1876 the plan of publishing the *Index Catalogue* was matured, and in 1880 the first volume was printed. Of this monumental work which amazed the world, there are now thirty-three volumes. The same fertile genius created the *Index Medicus* which was continued by Fletcher.

His military labors developed in him an inexhaustible interest in public health and in hospital organization. He was the adviser and builder of Johns Hopkins and other hospitals. He delivered courses on the history of medicine in Johns Hopkins University, was professor of hygiene in the University of Pennsylvania and director of its new laboratory of hygiene. In 1896, he became director of the New York Public Library. Some weeks ago he left behind him two millions of books and fifty branch libraries. For two editions of the United States Census he was the statistician, of the Carnegie Institution of Washington he was the chairman.

His erudition was stupendous, not only in medicine, but in history and the literatures of the world. His vast reading and retentive memory carried him into all continents and zones, into sciences and trades, into chemistry, physics, and meteorology.

Such was the commanding genius with the measured tones, the pleasant voice, the humorous remarks, the interest in all that was human, in social problems, and economic and political questions. Withal, he was governed by unfailing modesty and a cheerful readiness for self extinction. In his disinterestedness he did not so much as think of complaining, when the inauguration, two years ago, of his own creation, the library, was not even to be graced by his ever thoughtful and forceful eloquence.

The multiplicity of his virtues, aims, and results cannot be expressed in a few sentences. We trust, however, that it is not probable that the lightheartedness and forgetfulness of an ungrateful republic will deal with his memory as with that of lesser men. It is in him that the combination of American idealism and creative constructiveness is best represented, an example to be imitated by all men both great and small in all countries. Though Billings was rarely active in this hall, his perfections are known to us and will be appreciated forever. His very life, ever vigorous, ever modest, ever bountiful, is his eulogy. There is nobody here who is not impoverished by the loss of his efficiency and influence. To those who were personally near to him to the members of his immediate family, it is for us a sad and an honorable duty to express our mournful sympathy.

Civil Service Examinations.—The Civil Service Commission of New York State announces that a number of open competitive examinations for the State service will be held in various cities throughout the State on May 3, 1913. These examinations cover positions in the classified service in the State departments and institutions. Intending competitors must execute application blanks and file them in the office of the commission on or before April 25, 1913. Candidates must be full citizens of the United States, residents of New York State for at least three months before the date of the examination, and at least twenty-one years of age. Among the positions for which examinations will be held are:

67. Assistant medical officer, health officer's department, Port of New York. $1,500. This position is in the detention and hospital service at the quarantine station, Staten Island, N. Y., and requires a knowledge of cholera, plague, yellow fever, smallpox, and epidemic cerebrospinal meningitis. This examination is open only to licensed medical practitioners of the State of New York. Candidates will not be required to appear at any place for written examination, but will be rated on their age, education, experience (particularly with the quarantinable diseases), and personal qualifications as shown by their sworn statements and by answers to such inquiry as the commission may direct to proper sources of information among persons acquainted with their experience and qualifications.

69. Medical superintendent, Oneida County Hospital at Rome, N. Y., established pursuant to the provisions of Chapter 218 of the Laws of 1912. Salary $2,500 and maintenance for the superintendent and his family. Candidates must be well educated physicians, graduates of legally chartered medical colleges, with an experience of at least six years in the actual practice of medicine, including at least one year's actual experience in a hospital. Subjects of examination and relative weights: Questions relating to hospital management, including the purchase of supplies, 3; questions on general medicine, surgery, and hygiene, and the treatment of tuberculosis, 3; education and experience, 4. In connection with the rating of the last subject, candidates may be summoned to Rome, N. Y., for an interview with the examiners. Special credit will be given for actual experience as executive head of a hospital. Open to all citizens of the United States, preference in certification being given to residents of the State of New York.

Pith of Progressive Literature.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT

February 4, 1913.

Thyrosis and Tuberculosis.—L. Saathoff says that tuberculosis has an important causal relation to the origin of thyrosis, including Basedow's disease. In most cases, there is an incipient form of tuberculosis with favorable prognosis; progressive forms lead less frequently to thyrotoxic symptoms. In otherwise uncomplicated cases of thyrosis a rise of temperature is almost always due to a concomitant tuberculosis. The existence of a true Basedow's fever is questionable.

Diphtheria Bacilli in the Urine.—W. Bayer examined the urine of nineteen patients in the convalescent stage of diphtheria for the presence of the bacilli. In all the cases the findings were positive. In four of the cases the diphtheritic attack had occurred from eight to ten weeks previously. In two of the cases the urine contained albumin at times. From experiments on animals it has been shown that these bacilli are still capable of making toxines energetically. Urotropin medication was ineffectual in making the bacilli disappear. These results show that it can no longer be denied that diphtheria, like every other infectious disease, is accompanied by a bacteriemia, and the excretion of the bacilli through the urine furnishes a new source of infection not hitherto recognized.

Neobornyval.—Rigler recommends the use of the almost odorless and tasteless neobornyval in various nervous conditions. The results in a case of cardiac neurosis were particularly gratifying. The maximum dose is eight gelatin pearls in one day. The drug is to be withdrawn slowly and the administration withheld for a more or less extended period of time.

Lithotripsy or Lithotomy?—Feiber decides this question in favor of lithotripsy on the basis of his many years' experience. In only four out of 900 cases the operation could not be carried out without the loss of blood; general anesthesia was necessary only six times; out of eight deaths only four could be directly traced to the operation. The majority of the patients had passed their sixtieth year, the oldest being eighty-five years old.

February 11, 1913.

Action of Serum Ferment in Pregnancy and Presence of Tumors.—P. Lindig found that the serum of pregnant women and of those having tumors in the course of the genital tract, and perhaps also the serum in inflammatory conditions, contains a proteolytic ferment which is capable of splitting the proteid of placenta, uterus, ovary, and tumors of the genital tract and, to a lesser extent, the proteid of muscle.

Colopyemia; Significance of the Bacterial Anaphylatoxines.—A. Hamm relates an interesting case of colopyemia following a curettage after abortion. The patient had chills, accompanied for a time by severe dyspnea, from which, however, she rallied quickly. The last attack was particularly stormy; for hours the woman had a distressing, choking sensation, with convulsive movements of the body. The autopsy revealed no findings which could explain these subjective symptoms; at least, no large embolus was found. There were extensive thrombi of all the veins of the pelvis. Colon bacilli were procured in pure cultures from the thrombi and spleen. The blood during life had been negative for cultures of this bacilli. It is probable that the bacteria suddenly thrown into the blood were rapidly destroyed, causing the organism to be flooded with endotoxines; the peculiar dyspnea was no doubt the expression of a bacterial anaphylactic poison.

Electrolysis for Neuralgias of the Trigeminus.—A. Réthi has obtained good results with the electrolytic method in cases of trigeminal neuralgia. The treatment is without effect cosmetically. The action is surer than with injections of alcohol. After sufficient anesthesia of the neural canal, the stream, increasing from twenty to thirty milliampères, is permitted to act for fifteen minutes.

Indications for the Action of Homburg Mud.—Von Noorden has employed the mud of Homburg springs for years with excellent results in all kinds of cases of rheumatic, gouty, neuralgic, and inflammatory infections. This mud is a decidedly radioactive sediment of the Homburg waters.

Painless Labors.—A. Voel lessens the pains of labor by large doses of morphine and by making the perineum insensible to the passage of the head by the subcutaneous injection of cocaine adrenalin.

February 18, 1913.

Appearance of Virulent Tubercle Bacilli in the Blood after Diagnostic Tuberculin Injections.—Bacmeister, in thirty animal experiments, found virulent tubercle bacilli in the blood of four human beings suffering from affected lungs. In every case the blood was taken during the reactionary period after the tuberculin injection. In these four patients the animal experiments were negative before the tuberculin injection was given. Even though harmful results were not observed in these four cases, the fact that the subcutaneous tuberculin injections act provocatively upon the hematogenous distribution of the virulent tubercle bacilli should urge one to the utmost care in the application of the tuberculin injections for diagnostic purposes.

Neosalvarsan Poisoning.—P. Wahle reports two cases of fresh secondary syphilis in which, following the intravenous injection of 0.9 gramme neosalvarsan a severe nephritis ensued. In one of the cases a pneumonia developed, following the nephritis, which proved almost fatal. The possibility of errors in the preparation of neosalvarsan at the clinic are practically nil. In these cases the severe toxic side action of the neosalvarsan must be assumed to be due to the neosalvarsan itself, and these actions have not been observed with the older salvarsan. The seriousness of their appearance is enhanced by the impossibility of foretelling their occurrence.

Tubercle Bacilli in the Circulation.—E. Rosenberg had occasion to examine the blood of many patients suffering from pulmonary and surgical tuberculosis and found in every case acidfast bacilli of the character of the tubercle bacilli, while from the blood of normal persons these were absent.

February 25, 1913.

Water as a Source of Goitre and Cretinism.—A. Kutschera, for the following reasons, disapproves of the theory that water bears an etiological relation to goitre and cretinism: 1. Epidemics have been observed in habitation communities but not water communities. 2. Animal experimentation shows that goitre and cretinism may arise without the presence of water. 3. Epidemiological studies prove that their appearance and disappearance in families and houses show that the cause of the disturbances must be sought in the house itself and in the apartments in the immediate neighborhood of the stricken persons. The transference of the disease by an intermediate host is probable.

Treatment of Wounds with Sugar.—G. Magnus has had favorable results with this treatment, and believes it deserves further investigation. Sugar has a disinfecting and anteputrefactive action, causes the liberation of fibrin, stimulates the secretion by drastic osmotic procedures, like a serum flush of the wound from within outward; all these furnish favorable conditions for healing, which manifests itself by rapid cleansing, deodorizing, the formation of healthy granulation tissue, and the rapid growth of new skin. The sugar is harmless, cheap, and to all intents and purposes a sterile medication.

ZENTRALBLATT FÜR CHIRURGIE.

March 1, 1913.

Treatment of Beginning Gangrene.—M. Borchardt reports the case of a man, fifty-four years old, in whom severe arteriosclerosis produced gangrene of the toes that required their exarticulation and later amputation of the thigh. The femoral artery was found to be almost occluded at the place of amputation. Convalescence was retarded by thrombosis and gastrointestinal hemorrhages. Then symptoms appeared in the other foot in the same sequence, pains in the toes, heaviness in the limb, and blue discoloration, so that the patient himself recognized the danger of gangrene. As the usual measures, raising the limb, heat, etc., gave no relief, alternate hot and cold baths were applied to the knee. Two high pails were filled with water, the temperature of that in one being 35° C., that in the other the ordinary temperature of hydrant water. The leg was placed in one pail for a few seconds, then in the other pail, the water reaching to the knee, and the procedure repeated from thirty to fifty times a sitting. Gradually the temperature of the warm water was raised to 55° C., while the other was kept cool by the addition of fresh water. These baths were taken morning and evening for weeks. The result was notable; the pains promptly disappeared. During the bath the leg always looked red and warm, and the hyperemia was much greater than in a hot bath alone. The patient has maintained these baths for a year and a quarter, gangrene has not developed, and the circulation is constantly growing better. In other cases in which the gangrene was too far advanced to be arrested, the pain was greatly relieved. These alternating baths seem to be indicated in the early stages of gangrene; they favor the development of a collateral circulation and improve the blood supply. Repeated observations of the hyperemia during the bath furnish information concerning the nutrition of the limb, and the best place to amputate when that operation is necessary.

LYON MEDICAL.

March 2, 1913.

Chronic Jaundice as a Sequel to Tuberculous Peritonitis.—F. Mouisset and J. Gaté report a case of chronic jaundice in which symptoms suggestive of both cancer and cholelithiasis were present, but no evidence of either could be found at operation. The bile ducts could not be dissected out at the autopsy owing to their obliteration by dense adhesions, of which a latent tuberculous peritonitis of the adhesive form during the patient's childhood or adolescence is believed to have been the cause.

Results of Franke's Operation.—Mouriquand and Cotte report that in four cases in which they avulsed some of the intercostal nerves to relieve tabetic gastric crises, good results were uniformly obtained. They consider the operation a safe one. When a nerve is avulsed the corresponding spinal ganglion not infrequently comes with it. The resulting tear in the dura heals without difficulty.

PRESSE MÉDICALE.

March 8, 1913.

Uses of Blood Serum in Surgery.—H. Nolbia states that, as shown by Raymond Petit, blood serum need not have been freshly obtained when its curative effects in local inflammations are sought. The serum may be kept in aseptic ampoules or as a dry powder, the latter being diluted with ten parts of sterile saline solution for use. Petit advises the use of horse serum that has been heated to 56° C., certain noxious properties being removed by this process. In burns, after careful cleansing of the adjacent skin, the blebs should be aseptically opened, without removal of the epidermis, and the entire area washed with hydrogen dioxide solution, then with boiled saline solution. Sterile gauze, dipped in the heated horse serum, should then be applied, and the whole covered with a compress moistened with saline solution, an impervious dressing and cotton wool, rather loosely applied. The dressing should be renewed at first daily, then on alternate days. If the surface becomes macerated, the impervious covering should be left off, the surrounding skin anointed with a little sterile petrolatum, and dried serum used instead of the wet dressing. Rapid healing occurs under this treatment. In abdominal operations, especially in septic cases, from twenty to thirty c. c. of serum may be poured into the peritoneal cavity, before draining, with advantage. In puerperal infection, after the uterine cavity has been evacuated, washed, and dried, a piece of sterile gauze, the end of which has been folded around one gramme of dried serum, and the whole then dipped in the fluid serum, may be inserted into the uterus.

SEMAINE MEDICALE

March 12, 1913.

Treatment of Fracture of Patella.—Lejars asserts that the possible harmful effects of circling the patella with wire have been grossly exaggerated and advises that, where operative treatment is in-

dicated, metallic sutures should be used in preference to catgut or any other resorbable material. The chief function of wiring is to permit of early, energetic mobilization; if catgut is used, the sutures will soon become weakened, and mobilization will involve the risk of breaking the fragments apart. Lejars wired fifty-one cases with complete success in all but one, in which infection took place, followed by ankylosis.

ARCHIVES INTERNATIONALES DE PHARMACODYNAMIE ET DE THÉRAPIE.

Volume XXII, Nos. 1 and 2.

Influence of Antipyrine, Acetphenetidin, and Acetanilide upon the Gases in the Blood.—Guido M. Piccinini showed experimentally that these agents lower the total amount of oxygen in the circulating arterial blood. The diminution is slight with antipyrine, which, in fact, in large and medium sized doses causes at first an increase. With the other two agents the decrease is both pronounced and constant. The variations in the amount of carbon dioxide in the blood are not parallel with those in the oxygen. The respiratory functional capacity of the blood and the respiratory interchanges are diminished by these drugs.

Behavior of Digitalis Substances in the Organism.—C. Lhoták von Lhota found it possible so to habituate rabbits to digitalis administered orally that as much as thirty grammes could be given daily without causing death. Symptoms such as paresis and diminished cardiac rate, appearing early in the experiments, would later disappear, notwithstanding an increase in dose. Neither in acute intoxication nor in the habituated animals could digitalis substances be detected anywhere but in the stomach; it was concluded that the activity of the drug was destroyed in this organ and in the duodenum. Even in the normal rabbit this destruction of the drug occurs to a marked degree, but in those habituated it is further increased. The heart and voluntary muscles themselves become less susceptible to the effects of digitalis in the habituated animals.

Nos. 3 and 4.

Antitetanic Action of Calcium Salts.—S. Yagi found that upon injecting calcium chloride into frogs, the administration, two or three hours later, of a dose of strychnine more than the double of that ordinarily required to induce convulsions, failed to bring on true tetanus. Similar results were obtained upon substituting caffeine or guanidin for the strychnine, but not when picrotoxin or phenol was used. The effects are ascribed to a diminution in the irritability of the muscles themselves under the influence of calcium.

Magnesium Sulphate in Arsenical Poisoning.—D. Sieber was able to save animals to which a lethal dose of Fowler's solution had been given by mouth or subcutaneously, by injecting full doses of magnesium sulphate under the skin. Animals poisoned intravenously, however, could not thus be saved. The magnesium acts, therefore, only before the arsenic has entered the blood and combined with the tissue cells. Its effect is probably produced through retardation of the absorption of the arsenic owing to the formation of magnesium arsenic compounds that are only slightly soluble. Subcutaneous injections of magnesium sulphate should be used in cases of arsenic poisoning, provided they can be given soon after the introduction of the poison.

Effect of Sodium Bromide on the Metabolism of Purins.—A. Jappelli found that the elimination of uric acid is diminished, while that of the alloxuric bases is notably increased by the administration of sodium bromide in full doses to dogs. It seems probable that this result is due to an inhibitory effect of the bromide ion upon the diastatic ferment that normally converts the purin bases into uric acid.

BRITISH MEDICAL JOURNAL.

March 22, 1913.

Action of Salicylic Acid and Chemically Allied Bodies in Rheumatic Fever.—Ralph Stockman bases his paper on clinical observations supplemented by laboratory experiments. When benzoic acid, or sodium benzoate, is given in doses of from fifteen to twenty grains, hourly or every two hours, the antirrheumatic action is unmistakable, but very much weaker than that of sodium salicylate. Salicylic acid itself is in no way superior to sodium salicylate as an antirrheumatic. The salicylates act very quickly and efficiently when the rheumatic infection is recent and confined to the joints, but when the fibrous tissues of the heart valves or of the muscles or body generally are deeply implicated, they are far less energetic and effective in action. In an uncomplicated case about one ounce of sodium salicylate spread over two to four days is usually sufficient to abolish symptoms, but it is not curative, hence relapses are apt to occur unless its administration is kept up in suitable doses for about three weeks longer. The intravenous use of the drug is effective in promptly relieving pain, but the doses are too small to be of curative value. Extremely large doses of sodium salicylate have been recommended, but it is doubtful if the body can be sterilized thus, and it is not agreed that they are practically more efficient than smaller ones. Acetyl salicylic acid is a more powerful analgesic than sodium salicylate, but it is doubtful whether all of it undergoes decomposition with the liberation of salicylic acid. There is no reason to suppose that its antirrheumatic action is other than that of the liberated salicylic acid. None of the salicylates upon the market, either the pharmacopeial or proprietary preparations, is superior in antirrheumatic action to sodium salicylate. A great number of chemically allied substances have been found to be wholly without action in rheumatism, and free from analgesic action, though their chemical constitution would suggest antirrheumatic powers.

Death by Electric Currents and by Lightning (*Lecture III*).—A. J. Jex-Blake says that it seems as though death by lightning might occur in one of three different ways—by failure of the heart (ventricular fibrillation), by failure of the respiration, or by the failure of both together. In the vast majority of cases consciousness is lost at once, and death takes place very rapidly, if at all. The prognosis for recovery is very good in those cases where

death is not sudden. Many of the deaths could be avoided if proper treatment had been instituted at once and maintained sufficiently long. The only available treatment at present seems to be efficient artificial respiration, and is applicable to the second mode of death alone. On the subject of prophylaxis several admonitions can be given. It is certainly safer in the house than out of doors, and large houses are much safer than shanties. Closure of the windows and doors is a valuable precaution, and one should keep away from the walls. It is very dangerous to stand under an isolated tree; the oak is the most dangerous, while the beech is the least. It is more dangerous to be in a crowd of people, or among a herd of cattle, than to be alone, for lightning seems to be attracted by such groups.

Cases Treated by Radium in the Royal Infirmary, Edinburgh, during 1912.—Dawson Turner relates his experiences with forty-one cases representing different conditions, and shows that, in his hands at least, the classes of cases most benefited were those of nevus or of rodent ulcer. One or two striking results were obtained in cases of far advanced carcinoma, but this was exceptional.

LANCET.

March 22, 1913.

Genital Functions of the Ductless Glands in the Female (*Lecture I*).—W. Blair Bell finds that in cats oophorectomy causes a reduction in the calcium excretion by about one half, and that the phosphorus excretion is greatly increased. This suggests that the ovaries are concerned in calcium excretion and the suggestion finds confirmation in the fact that the functions of these organs are in abeyance during pregnancy and lactation in the woman, and at these times the fetus and the milk require all of the excess calcium of the mother. Oophorectomy or ovarian insufficiency in the human being leads to changes in the thyroid, which may either resemble those seen in experimental animals, that is, colloid accumulation, or, more rarely, the condition seen in exophthalmic goitre. It has been stated that oophorectomy diminishes the output of calcium, and it is known that the output is much increased in Graves's disease, so that this condition may represent a countereffect to ovarian insufficiency. But little can be said of the relation between the ovarian function and the pituitary body. It is known that there is a peculiar and active state produced by pregnancy in the pars anterior and the pars intermedia, but we are not led to suppose that this is due to ovarian insufficiency.

Bastedo's Sign; a New Symptom of Chronic Appendicitis.—Arthur F. Hertz has used Bastedo's method of dilating the colon with air to elicit localized pain or tenderness in the region of a chronically inflamed appendix, and has obtained a positive result in appendicitis only. In every positive case the appendix was found diseased at the subsequent operation.

Ionic Medication in Herpes zoster.—Angus Macnab finds that the introduction of quinine sulphate into the affected region by the electric current gives excellent results in the relief of pain and anesthesia of herpes zoster. He treats the part with from one to twenty milliampères passed through an electrode saturated with a solution of sulphate of quinine. The positive pole is used and the treatment varies from three to twenty minutes in duration. The method has been applied to the eye in some cases in which the herpes involved this organ, and the results have been very good.

BOSTON MEDICAL AND SURGICAL JOURNAL.

March 27, 1913.

Present Position of Abdominal Cæsarean Section in Eclampsia.—John T. Williams has compiled the results obtained by abdominal and vaginal Cæsarean section and by manual or instrumental dilatation of the cervix for the purpose of rapid delivery, and find that abdominal Cæsarean section in eclampsia has a maternal mortality of 48.2 per cent., vaginal Cæsarean section a mortality ranging from three to eighteen per cent., and dilatation of the cervix one ranging from seven to twenty-six per cent. Therefore, he concludes, abdominal Cæsarean section in eclampsia should be restricted to those cases in which there is a pelvic contraction sufficient in itself to demand it, and possibly also early cases of threatened eclampsia at or near term, where the shock of a vaginal delivery seems to offer much greater danger than the added strain imposed upon the excretory organs by Cæsarean section.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

March 29, 1913.

Study of the Toxicity of Salicylates Based on Clinical Statistics.—Paul J. Hanzlik concludes from this study that the mean toxic doses of the different salicylates for adult males and females, respectively, are 180 and 140 grains of the synthetic sodium salicylate: 200 and 135 grains of the natural sodium salicylate; 120 minims of the oil of ganethesia (methyl salicylate); 165 and 120 grains of acetylsalicylic acid (aspirin); and 100 and 83 grains of salicylosalicylic acid (diplosal). For females the toxic dose of the salicylates is apparently eighty per cent. of that for males. The toxic dose of salicylosalicylic acid is about fifty per cent.; that of methyl salicylate and acetylsalicylic acid about sixty per cent. of that of sodium salicylate. The toxic dose of the synthetic sodium salicylate for the majority, or about sixty-eight per cent., of individuals of both sexes lies between 100 and 200 grains. Practically the same is true of the methyl salicylate. Between sixteen and seventy-five years the toxic dose is not influenced by age. In white and colored races the toxic dose of the synthetic salicylate is the same. In various diseased conditions the toxic dose of different salicylates is practically the same. The toxic dose of the synthetic salicylate is not modified by the therapeutic response in various diseased conditions. The therapeutic efficiency of synthetic sodium salicylate is greatest in rheumatic fever and, not infrequently, partial and even complete relief is obtained in other conditions. There is no relation, presumably, between the occurrence of albuminuria in febrile and afebrile conditions and toxic doses of the synthetic salicylate. Though individuals show idiosyncrasy toward toxic doses of the synthetic salicylate, no connection between these idiosyncrasies and the

factors of age, sex, race, or diseased condition was found. The idiosyncrasy varies in the same individual and is not influenced by previous salicylic medication.

Autoserotherapy in Serofibrinous Pleurisy.—Maurice Fishberg concludes that autoserotherapy appears to be worthy of more extended trial. No untoward symptoms have been noticed. It may be done with the case of an ordinary exploratory puncture. It should be tried in every case of pleural effusion in which the fluid is not purulent. When, in a case of pleurisy showing signs of effusion, an exploratory puncture is made to determine the character of the fluid in the pleural cavity, if the fluid is found to be serous, the needle should not be wholly withdrawn; but when the point is brought to the subcutaneous tissue it should be injected then and there. The quantity to be injected need not be large (two to five c. c. suffices). In favorable cases the subjective symptoms (pain, dyspnea, prostration, etc.) will improve or entirely disappear, while examination of the chest will show less effusion than before. In about eighty per cent. of cases the fluid disappears in from seven to ten days. It may be necessary to repeat the treatment several times at intervals of two or three days before improvement is manifested. Failure occurs in about ten to fifteen per cent. of cases, but even in these the treatment occasions no harm to the patient.

Pneumococcus Meningitis with Normal Cerebrospinal Fluid.—Jules M. Brady concludes that the positive diagnosis of pneumococcus meningitis may be impossible during life, as a normal cerebrospinal fluid may be obtained throughout the course of the disease. The writer believes that anatomical changes (encephalitis, meningitis) occur oftener than is usually believed and are the explanation of symptoms from the side of the nervous system which we formerly regarded as functional (meningismus).

Grafting Preserved Amniotic Membrane to Burned and Ulcerated Surfaces, Substituting Skin Grafts.—Maximilian Stern has used preserved amniotic membrane as a substitute for skin in grafting the surfaces of ulcers, burns, scalds, and traumatic denudation. It has not been tried on electric, x ray, or extensive burns. The writer's success in the former class of cases leads him to the conclusion that if the amniotic graft should do as well or nearly as well as true skin, it must commend itself for general use, as it abolishes the necessity of anesthesia and the production of a secondary wound.

Hydrophobia.—Alfred Hand, Jr., Courtland Y. White, and John Reichel aver that with the history of a disease extending through centuries, with sporadic cases as well as epidemics following the path of a rabid dog, with a typical and characteristic symptom complex following within a limited period of incubation, with an invariably fatal termination following untreated cases, with a prophylactic treatment insuring favorable prognosis, with a negative pathological picture in the cases, and finally with constant microscopic lesions, we must conclude that these cases are caused by some specific agent which is infectious and transmissable.

MEDICAL RECORD

March 29, 1913.

Occurrence of Dextrorotary Albumins in Organic Nature.—John Beard's experiments confirm the truth of the biological and embryological conclusions that the cycle of animal life, even that of the protozoa, is an antithetic alternation of asexual and sexual generations, of such nature that the albumins of the asexual generation (dextrorotary) are the stereochemical antitheses of those of the sexual generation (levorotary). All such asexual generations of animals, including all malignant tumors, are killed or pulled down in the living state by the action of active solutions of the pancreatic ferments, trypsin and amylopsin. As long ago as 1907 Beard stated that the pancreatic ferments, trypsin and amylopsin, were the natural means for curing tuberculosis. This was confirmed in a case of tuberculosis of the bowel by Margaret A. Cleaves, and in various forms of surgical tuberculosis by Bätzner, who showed that solutions of trypsin do not inhibit the growth of tubercle bacilli, thus proving that the favorable result was due to the use made by the leucocytes of the ferments, trypsin and amylopsin, as weapons of attack. Since the organisms causing the chief tropical diseases (malignant malaria, trypanosomiasis, sleeping sickness, yellow fever, relapsing fever, kalaazar, etc.) are, so far as these attack human beings, asexual generations, it follows that the natural means of destroying the organisms of such tropical diseases and of curing the patients, are the use *in combination* of the powerful pancreatic ferments, trypsin and amylopsin. By a parity of reasoning, all infectious diseases due to parasitic organisms of an asexual nature, all of which possess dextrorotary albumins, such as pyemia, smallpox, scarlet fever, pneumonia, leprosy, Asiatic cholera, and others of a similar nature, must be, and are curable naturally by trypsin and amylopsin, in combination. The writer promulgates the general principle that the microorganisms, bacilli, etc., of disease are, of necessity, composed of compounds which are stereochemical antitheses of those making up the human body, and when compared similarly with the pancreatic ferments, the like is true of the ferments by means of which they effect their end. It follows that the pancreatic ferments, trypsin and amylopsin, in combination, are the most powerful agents in the whole range of organic nature.

Action and Administration of Crotalin in Pulmonary Consumption and in Epilepsy.—Thomas J. Mays states that the therapeutic efficacy of crotalin in pulmonary diseases lies primarily in its power of influencing the respiratory centre and its efferent pulmonary nerve fibres, and, secondarily, by its general action on the nervous system, in minimum and medium doses. The remedy may be used by the arm method, the neck, the intravenous, or the nebulization methods. The solution is made by dissolving one grain of crotalin in 100 minims of glycerin and 400 minims of distilled water. Five minims of this solution represent 1/100 grain crotalin, an average dose. For the nebulization method, four grains of crotalin are dissolved in 400 minims of liquid petrolatum.

Differential Diagnosis between Pneumonia and Appendicitis.—Gustav F. Boehme, Jr., emphasizes the fact that the differential diagnosis is often not easy, as the points of differentiation are few until definite signs of lobar pneumonia develop. The writer points out the aids for differentiation, considering pneumonia simulating appendicitis, appendicitis simulating pneumonia, coexistence of the two processes, and finally postoperative or ether pneumonia. He concludes that it is probably better to remove a normal appendix with an existing pneumonia unrecognized than to allow a pus appendix to remain, to awaken too late to save the patient from general peritonitis.

Treatment of Erysipelas in Infants by Means of Vaccines.—E. Mather Sill, having previously reported two cases of erysipelas in infants which were cured by injections of streptococcus vaccine, now adds eight more cases treated by vaccines. Of these ten cases, seven were treated with streptococcus vaccine alone, one case with combined vaccine (streptococci 50 millions, stophylococci 500 millions, colon bacilli 200 millions), and two cases with Schaefer's mixed infection (hylacogen. As only one case treated with the streptococcus vaccine was fatal (a mortality of ten per cent.), although some cases were in very young babies and others were rhachitic or badly nourished infants, with poor resisting power against infection, the writer believes that the use of streptococcus vaccine in infantile erysipelas is the most efficacious treatment at command; but he insists that it should be used in large doses at twenty-four hour intervals, together with the use of approved local measures.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES

March, 1913.

Symptomatic Differentiation between Disorders of the Two Lobes of the Pituitary Body: Syndrome Accredited to Hyperplasia of the Anterior and Secretory Stasis or Insufficiency of the Posterior Lobe.—Harvey Cushing advances the view that skeletal overgrowth, possibly combined with certain cutaneous changes and hypertrichosis, indicates a hyperplasia of the anterior pituitary lobe. Certain types of adiposity, on the other hand, associated with an increased assimilation limit for carbohydrates, frequently a dry skin, subnormal temperature and pulse, characterize the metabolic disturbances from posterior lobe insufficiencies. Hypertrichosis and sexual dystrophy commonly accompany this symptom complex. If the combination of these factors is assumed, we can explain certain not unfamiliar clinical syndromes, in which overgrowth is associated with adiposogenital dystrophy, differing from the familiar syndrome of Fröhlich, not only in the absence of an hypophyseal tumor with sella turcica enlargement, but also in their opposed skeletal features. These physical states indicate an anterior lobe hyperplasia associated either with hypoplasia of the posterior lobe or with what is practically the same thing, stasis of posterior lobe secretion.

Gastric Disturbances in Tabes dorsalis.—William F. Cheney has observed during the past year five patients who sought advice for gastric disturbance, in whom this ultimately proved to be one of the manifestations of tabes dorsalis. All had suffered for years without being aware of the true nature of their disease. Two had been operated on for supposed gastric ulcer, without relief of their symptoms; a third was also subjected to surgery by the advice of the writer before it was discovered that organic gastric disease was absent and the true nature of the disease was disclosed. It is apparent from these facts that the gastric manifestations of tabes are not always recognized as early as they might be, and that perhaps more cases of "stomach trouble" are really spinal in origin than has been suspected. If one is alert, the recognition that certain gastric disturbances are really due to tabes is never difficult. Their diagnosis is not facilitated by any fixedness in the nature of these disturbances or in the frequency of their recurrence. They are unaccompanied by the evidences of organic stomach disease that one might expect; they recur in spite of treatment specially directed to the stomach, even in spite of laparotomy; as a rule they appear abruptly, without reason, and cease suddenly without relation to treatment, leaving the patient perfectly well in the intervals, so far as gastric disturbance is concerned. Moreover, these gastric disturbances may be present for years before the symptoms of "locomotor ataxia" appear, or any symptom referable to spinal disease. We must prove the connection between the two by discovering signs of tabes unknown to the patient, such as faulty reflexes and cutaneous sensibility, and changes in the spinal fluid obtained by lumbar puncture; the last link in the chain is the demonstration that active syphilis exists, by the Wassermann reaction in the blood and spinal fluid or even in the latter alone.

The Lymphocytosis of Infection.—Richard C. Cabot observes that the great majority of diseases are accompanied, during their acute stage, by an increase in the polynuclear leucocytes. Typhoid and malaria, among a few, show no marked change. Occasionally we have an increase of lymphocytes, in infections usually associated with polynuclear leucocytosis, and observed very commonly in pertussis. The writer reports four cases which would ordinarily be associated with polynuclear leucocytosis, connected apparently with a streptococcic infection, and interesting clinically on account of the liability of confounding them with lymphatic leuchemia and thus causing unnecessary alarm as to prognosis. From a study of these cases the writer concludes that wound sepsis, boils, and widespread streptococcic adenitis of tonsillar origin may be marked by a lymphocytosis so pronounced as to suggest lymphoid leuchemia. No explanation can be given for this substitution of lymphocytosis for the usual polynuclear leucocytosis of infection. Finally the differentiation between such a lymphocytosis (accompanying a widespread adenitis) and leuchemia rests upon the recognition of an infectious origin for the adenitis, upon the lesser degree of lymphocytosis in the infectious type, and upon the course of the disease.

Gastric Ulcer without Food Retention; a Clinical Analysis of One Hundred and Forty Operatively Demonstrated Cases.—Frank Smithies, from a clinical analysis of 140 cases of operatively demonstrated surgical gastric ulcer with-

out food retention, concludes that in more than one third of operatively demonstrated gastric ulcers the stomach maintains its emptying power. Ninety-two per cent. of this group occur between the ages of thirty and sixty years, males being affected three times as frequently as females. The American born farmer furnishes a large number of gastric ulcers. A frequent concomitant of gastric ulcer is an irregularity of food ingestion with the use of alcoholic stimulants. A history of previous infectious disease is rather frequent, typhoid fever having been present in 18.9 per cent. of the cases reported by the writer. In the average gastric ulcer a mild grade of secondary anemia is present. An average of more than twenty pounds of weight loss without cachexia was shown in the series; this loss may be so rapid as to suggest malignant disease: as an exception some gain weight. In nearly three fourths of the cases the appetite is either lost or is capricious, and more than sixty-five per cent. are constipated. Nearly three fourths of the cases have spells or attacks of discomfort resembling "biliousness" or "dyspepsia," with normal health between such, lasting over a period of thirty or more years, and after showing a peculiar seasonal relation, while in thirty-six per cent. the disability is continuous, with or without disturbance of nutrition. Abdominal pain or distress is a constant symptom, and vomiting is present in nearly three fourths of these cases. Hematemesis or melena occurred in 40.7 per cent., one fourth had the former alone, one third hematemesis with or without melena, while 7.1 per cent. had melena alone. More than two fifths of the ulcers were at the pylorus. Prompt relief of symptoms with a comfortable convalescence, as a rule, follows operative treatment of retention free ulcer cases.

Dissemination and Prevention of Yellow Fever.—Joseph H. White concludes, from a study of the 1905 epidemic in New Orleans, that the mosquito is the only disseminator of yellow fever, and the female stegomyia the only genus and species proved to be the carrier. During the first three days only is yellow fever infective, and the mosquito which bites a patient after that time receives no infection. At least ten days must elapse after the ingestion of the yellow fever blood before the stegomyia itself can convey the infection to another human subject. Immunity usually follows an attack of yellow fever, but not always. Feeble susceptibility in the negro is sometimes mistaken for immunity, and mild cases are the rule with that race, causing many cases to be overlooked. In dealing with endemic foci all breeding places for all varieties of mosquitoes, especially stegomyiæ, anophelines, and culicidæ, must be destroyed. Rapid anti-epidemic work, confined to the destruction of infected stegomyiæ, is short sighted.

AMERICAN JOURNAL OF OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN.

March, 1913.

Chorionic Villi in the Uterine Wall Eighteen Years after the Last Pregnancy.—Ries reports a very interesting case in which the foregoing findings were present in a colored woman of forty-five years. The last pregnancy ended an abortion which terminated naturally and was not followed by any signs of infection. Examination of the uterus showed degenerated villi in the veins and in the walls of a fibroid. No chorionic epithelium was found on these villi, but there is no way of telling as to when the epithelium was replaced by vascular endothelium. It may be that the absence of the chorionic epithelium is one of the reasons why no chorioepithelioma was found. Such a case as this, however, tends to clear up the pathogenesis of those cases of chorioepithelioma in which the tumor does not arise till many years after the last pregnancy.

Difficulty of Producing Sterility by Operations on the Fallopian Tubes.—Leonard reviews the various methods that have been employed in attempts to produce sterility by operating upon the Fallopian tube. None of the operations, from simple ligation to removal of the tubes, has been entirely satisfactory. It appears that Neumann's method, extirpation of the tubes together with excision of a wedge of uterine cornu, had best be adopted as the only simple procedure offering reasonable assurance of preventing subsequent conception.

Advantages of the Suprasymphyseal Extraperitoneal Cæsarean Section in Clean as well as in Presumably Infected Cases.—B. C. Hirst, for the following reasons, asserts this method to be more advantageous than that of the classical Cæsarean section: 1. The mortality of an extraperitoneal section should be the minimum in both clean and infected cases. 2. The uterine wound is in such a position that even if it should leak or become infected, the result is not necessarily disastrous. 3. There can be no intraperitoneal adhesions afterward with an abnormally high position of the uterus, as the least disagreeable consequence. 4. The convalescence of the patient is much more comfortable in every way. 5. The abdominal wound is stronger, less disfiguring, less likely to exhibit a hernia. 6. If the uterine wound should burst in a subsequent pregnancy or labor the accident is not so dangerous as if the wound was intraperitoneal.

Cæsarean Section for Central Placenta prævia.—Foulkrod considers operative delivery the more favorable method in these cases, as the hemorrhage is much less than by any method of vaginal delivery, the placental site being undisturbed. The shock of operation is no greater, especially in primiparæ with no attempt at labor. The child is given every chance to live and the mother, if she recovers, is left in much better physical condition. Also the danger of infection in unhandled cases is certainly much less by section and free drainage.

The Treatment of Puerperal Sepsis at the Sloane Hospital for Women.—Ward recommends conservatism in the treatment of puerperal sepsis. His method is divided into the prophylactic and the active treatment. Under the former he advises extreme care as to surgical asepsis, limiting as far as possible all ante partum, intra partum, and post partum examinations, interference and instrumentation, resorting to them only when clearly indicated. Under the latter is advised adequate uterine drainage, first, by simple vaginal and intrauterine saline douches. If this proves insufficient to control the process, explore the uterus at once, and once only, to make sure that it is empty of foreign products, using the finger for exploration, and with a mini-

mum of trauma to the uterine tissues. Treat expectantly secondary foci as they arise and support the general condition of the patient.

Why Incidental Removal of the Vermiform Appendix, when Reasonably Possible, Should Be the Rule.—Goldspohn discusses at some length the reasons why the appendix should be removed. He considers it a vestigial structure not to be regarded as an organ in any sense essential to the body. It is also the locus minoris resistentiæ of the entire intestinal tract, if not of the entire alimentary canal. This structure, as a result of diseased conditions, very frequently disturbs the functions of the stomach, duodenum, and the gallbladder. Then, too, the appendix may appear normal when really pathological. Out of 354 appendices removed incidentally, 237 were macroscopically diseased or abnormal.

AMERICAN JOURNAL OF SURGERY.

February, 1913.

Preserving the Sphincter in the Treatment of Fissure and Fistula in Ano.—G. A. Humphreys avers that drainage is the all important factor in the treatment of fissures. In men fissures are usually in the posterior commissure, and anteriorly in women if the perineum has been lacerated. In patients refusing operation for fissure, the writer inserts a straight piece of rubber tubing, about a half inch in diameter and five inches long, with a piece of gauze fastened to the upper end and extending down behind the tube. A large safety pin is now put through the tube and gauze and strapped to the buttocks with adhesive plaster. His patients are cured in from six to eight days. If, however, they submit to operation, the edge of the ulcer is trimmed off, the sentinel pile or any polypoid growth from above is removed, and, wherever the fissure is situated, a long, shallow incision is made in the posterior commissure without injury to the important fibres of the sphincters. In the treatment of fistula the patient has a thorough cleaning out with castor oil and calomel before the operation. A slightly curved incision, from two and a half to three and a half inches long, is made parallel to the fibres of the external sphincter with the external fistulous opening at the middle of the incision. A probe is passed from within outward, and with gentle traction on the probe the incision is deepened, following the fistulous tract to the rectal wall. When the tract is thus completely dissected out on the probe, the latter is withdrawn and the outer end of the fistulous tract cauterized and ligated. A second incision is now made around the anus and the mucous membrane dissected up, just as in the Whitehead operation, until the inner end of the fistulous tract is encountered. The fistulous tract is then drawn through and excised at the rectal margin and the incision at the edge of the anus sutured, while the first incision is drained with a strip of rubber tissue without suturing. A few strips of iodoform gauze and a large rubber tube are inserted into the rectum and the bowels are confined for a week or ten days.

New Method for Diagnosticating Renal Tuberculosis.—Leo Buerger excises the mucous membrane of the ureteral orifice in doubtful cases of renal tuberculosis. He says that miliary tubercles may be present in such tissue, although the only visible alterations of the mucous membrane are those which appear as "edema" even to the trained eye. Such miliary tubercles may be found in the ureteric ostium even though the rest of the ureter is almost free from tuberculous change and when the pelvis of the kidney, too, is but slightly affected. Such excised pieces make a positive diagnosis possible when the ureteral catheter fails us, when the guineapig inoculations are negative, when the urine is perfectly clear, and when the patient is presenting practically no symptoms.

Acute Osteomyelitis and Its Complications.—L. W. Allen points out that the diagnosis of a typical case of acute osteomyelitis characterized by a chill, an early and profound change in the condition of the patient, dry tongue, foul breath, intense gastric disturbance, rapid pulse, high temperature, early delirium, high leucocytosis, initial agonizing pain, swelling of the soft parts, and tenderness on deep pressure, is comparatively simple, but in early cases, particularly in infants, who cannot tell where the pain is, or in profoundly intoxicated cases, the diagnosis is difficult. In the differential diagnosis, arthritis, gonorrheal, tuberculous, or rheumatic, typhoid fever and tuberculous invasion of the epiphysis must be considered. Myelogenous or periosteal sarcoma, bone cyst, acute hematogenous osteomyelitis, and syphilitic osteitis must also be excluded.

ANNALS OF SURGERY

February, 1913.

Approach to the Hypophysis through the Anterior Fossa.—C. H. Frazier, in view of the high mortality of the transphenoidal method and the broader avenue of approach by the endocranial method, adopts the suggestion of Krause and successfully approached the hypophysis by way of the anterior cranial fossa in two cases. An incision is made down the middle of the forehead from just above the hairline to the root of the nose. Two incisions are now made at each end, one through the eyebrow and the other at right angles above the hairline. An osteoplastic flap is reflected from the right frontal region, the supraorbital ridge removed *en bloc* with a portion of the roof of the orbit, later to be replaced, and the roof of the orbit rongeured down to the optic foramen. With the elevation of the frontal lobe and the depression of the orbital contents, a free and adequate exposure is secured, and there remains only to make a short incision in the dura to lay bare the cavity of the sella turcica.

Postoperative Thrombophlebitis.—C. Burnham reviews the literature on the subject and draws the following conclusions from a study of ninety-eight cases occurring at the Presbyterian Hospital, New York: 1. Postoperative thrombophlebitis is an infectious disease, a definite entity in some way connected with the absorption of material from the wound. 2. It is preceded by a slowing of the blood stream and by local and general disease of the vessel walls. 3. It occurs at an earlier in "clean" cases than in drainage cases. 4. Rest in bed and ichthyol seem to be the only therapeutic measures capable of exerting any marked influence on the severity and course of the disease.

Multiple Myelomata, with Numerous Spontaneous Fractures and Albumosuria.—E. W. Hey Groves reports an unusual case of multiple myelo-

mata with numerous spontaneous fractures and albumosuria. The history begins twelve years ago with a severe attack of gastritis, followed by loss of weight, prostration, and diffuse rheumatic pains. This continued for a period of about a year. Then for six years he had a long succession of bone breakings, seven times fracturing one or other of the long bones, in addition to acquiring tumors of the jaw, metacarpus, and tarsus. But for the past five years he has had no further developments, either of fractures or tumors. Blood is normal, but albumosuria well marked.

Angulation of the Junction of the Hepatic and Common Ducts after Cholecystostomy, Simulating Common Duct Obstruction.—De Witt Stetten reports an instructive case of angulation of the common duct giving symptoms of obstruction. After a simple cholecystostomy done in the most approved fashion on a comparatively normal gallbladder, which was not in the least retracted and which was fixed to the peritoneum of the abdominal wall without the slightest tension, a symptom complex develops which most strongly suggests the presence of a stone in the common duct. On relaparotomy, no stone is found; but it is seen that an angulation has developed at the junction of the hepaticus and the choledochus. At the angulation a valve has formed so that the flow of bile into the intestine is almost impossible. Hence there were pain and jaundice when the biliary fistula was closed and a tendency toward persistence of the fistula after it was reopened. Though there was no tension originally when the gallbladder was fixed to the abdominal wall, yet angulation resulted. The condition was promptly cured by cholecystectomy. The writer says the less frequently one performs cholecystostomy, the less frequently will one have to deal with biliary fistulæ.

Strangulated Inguinal Hernia in Early Infancy.—Arthur X. Collins reports a case of strangulated hernia in an infant, eighteen days old. He points out that hernia strangulation under one year is more common than later and that the greatest frequency is in the first three months of life. The cardinal symptoms peculiar to infants are violent and uncontrollable screaming, recurrent vomiting (often fecal), drawn facies, tendency to both retention of urine and rapid collapse. In the diagnosis one must be on the lookout for the possibility of acute hydrocele and acutely inflamed ectopic testicle. Most of the fatalities are due to waiting, and in prompt operations the mortality ought to be ten per cent. or less. Taxis is dangerous and usually fails. The Bassini operation is favored by many surgeons.

LONG ISLAND MEDICAL JOURNAL

March, 1913.

Venereal Prophylaxis in the Navy.—T. A. Berryhill states that early in the use of prophylaxis there were, in a given period, 1,134 exposures to infection, all of the exposed men taking the prophylactic treatment. Of this entire number in none developed chancroid or syphilis, and in only two gonorrhea developed. The prophylaxis consists in washing of the parts with a one to 2,000 solution of bichloride of mercury, then washing in pure water and the taking of an injection of about two drachms of ten per cent. argyrol or two per cent. protargol, which is to be retained for three minutes by the clock. The penis is then to be smeared with an ointment of fifty per cent. calomel in lanolin. The ointment is to be thoroughly rubbed into all folds of skin around the prepuce and glans and is to be left on. It is believed, on the evidence of results, that the prophylaxis is more effective against syphilis, when given late, than against either gonorrhea or chancroid.

MONTHLY CYCLOPEDIA AND MEDICAL BULLETIN.

February, 1913.

Albee's Operation in the Treatment of Pott's Disease.—J. T. Rugh gives a historical review of the operative treatment of Pott's disease and refers to the results obtained by him in eight cases operated in by Albee's method. The procedure consists in grafting a piece of tibia to the spinous processes in the diseased area in order to secure bony fixation of the vertebral arches and relieve the bodies of the vertebræ from pressure. Plaster casts were kept on the patients for five months after the operation and a Taylor brace was then applied. The results were uniformly successful. The first patient is wearing a light brace and is ready to take up light work. In one case the condition present was found at operation, instead of Pott's disease, to be one of osteitis deformans, with some osteoporosis. The operation was completed, however, and the results proved as satisfactory as in the other cases. The procedure is not curative in itself, but places a brace along the spine as no cast or jacket can possibly do, Nature then healing the diseased area. It has not as yet been rendered applicable to cases with a pronounced spinal loss.

NEW ORLEANS MEDICAL AND SURGICAL JOURNAL.

February, 1913.

Acute Nephritis, with Uremia, Following Salvarsan.—P. Jorda Kahle reports a case of serious renal disturbances following the intravenous injection of salvarsan. There were several points of interest. The Wassermann reaction (Tschernogubóff modification) was positive, five days after the initial lesion. This shows the value of the reaction in clearing the diagnosis in early primary lesions in which the spirochetes cannot be found because the lesions have been subjected to treatment. Great care should be exercised in the administration of salvarsan, as injury to sound kidneys, or, in case of incipient or latent nephritis, an acute condition may follow the use of the drug. In examining the urine before and after giving salvarsan, the presence of albumin alone should not be taken as the measure or extent of the renal lesion, as both hyaline and granular casts may be present and albumin absent or present only as a trace. A diminished secretion of urine should warn us, especially if vertigo and headache are also present. Salvarsan may produce a rash, erythematous or urticarial, as it is being eliminated by the skin. It is comforting to know that though the kidneys have been damaged rather severely, still all symptoms may disappear completely within a few days, as happened in the case reported by the writer.

Interstitial Gestation.—William Kohlmann reports four cases of this interesting condition. Anent the treatment of interstitial tubal gestation, the writer advises that in case of rupture the general line of treatment applicable to extrauterine gestation be followed. Internal bleeding in a ruptured interstitial gestation sac may, however, be so severe that death occurs quickly, without possibility of surgical interference. The seat of the ovum is usually quite an extensive, lacerated wound of considerable depth on the lateral and posterior surfaces of the uterus. In many cases suture of the bleeding surfaces is sufficient, but excision of the affected portion with subsequent suture, is preferred as primary union is assured. After three months (as shown in cases reported) supravaginal amputation suggests itself as the quickest and least bloody procedure. In the first two months the writer advises excision of the comparatively small laceration with following suture; after the third month partial supravaginal amputation—wedge shape incision—which saves the annexa of the unaffected side, if they are normal.

Surgical Treatment of Puerperal Infection.—C. Jeff Miller has found that septic thrombophlebitis occurs more often than formerly supposed, and has a mortality of between eighty and 100 per cent. when treated expectantly. Ligation of the involved veins has arrested the process in several cases. A fair degree of certainty is reached in the diagnosis of chronic cases. Pyemic cases stand operations well. The surgical treatment of *pure* septic thrombophlebitis has shown a satisfactory reduction in mortality. In acute pyemia the mortality has been uninfluenced by operation, but in chronic cases, hopeful results may be looked for.

OPHTHALMIC RECORD.

February, 1913.

Protection of the Eyes of School Children.—Nelson M. Black and F. A. Vaughn present a compilation of the views held by various writers on the questions of light, paper, print, etc., and their effects on the eyes of school children, which is prompted by the feeling that, by proper cooperation between educators, ophthalmologists, illuminating engineers, publishers, and others, reading matter in the form of school books, and the illumination of the school rooms by daylight and by artificial light can both be improved to such an extent as materially to protect and preserve the eyesight of school children. The subjects treated are of general interest and have received some attention in the past. In order to obtain the viewpoint of the general reading public the article is printed on unglazed papers of different tints and qualities. The authors have published other addresses and discussions on different sample papers, the illustrations of which are made by the offset and other processes. Copies of these will be sent gratis to those interested. Comments, criticisms, and suggestions are solicited.

SURGERY, GYNECOLOGY, AND OBSTETRICS

February, 1913.

Subcutaneous Rupture of the Diaphragm and Positive Pressure (Meltzer).—E. C. Riebel groups as follows the so called classical symptoms: 1. Those due to insufficient air supply, excessive dyspnea, orthopnea, rapid, irregular, weak pulse, and anxious facial expression. 2. Those connected with displaced organs, vomiting, muscular rigidity, distention of epigastrium, widening of chest, and signs of pneumothorax. 3. Symptoms referable to injury of the diaphragm, jerky respiration, pain on forced respiration or coughing. 4. Referred symptoms, pain in the shoulder, due to irritation of the branches of the phrenic nerve. 5. Shock or symptoms of associated visceral lesions. The writer summarizes his observations as follows: The diaphragm in man has an important influence upon the heart's action, by its anatomical relation to the heart and pericardium. It is an important factor in the circulation by aiding venous return, especially from the abdominal cavity. It plays an important part in maintaining the equilibrium in the thoracic cavity. Rupture of the diaphragm must needs be followed by serious disturbances in internal respiration and in the equilibrium within the thoracic cavity. The inevitable prolapse of abdominal organs following subcutaneous rupture still increases this condition, frequently producing a state of positive pressure in the thoracic cavity. The use of differential pressure is absolutely necessary to overcome these factors. It will insure better results, in these cases, permitting furthermore the choice of abdominal or transpleural route or both as occasion requires. The character of pressure, whether positive or negative, is of little consequence, but the method of Meltzer is simple and can be used anywhere. In cases of suspected subcutaneous rupture of the diaphragm, insufflation should be employed with low pressure (from ten to fifteen mm.) before operation, to overcome the deleterious effects of disturbed endothoracic equilibrium.

Do the Parathyroids Function in Intrauterine Life?—A. Werelius makes the following conclusions: Thyroparathyroidectomized, pregnant dogs (in later stages) seemingly go into convulsions earlier and die sooner than nonpregnant dogs. In thyroparathyroidectomized, pregnant dogs, fetal parathyroids probably do not then compensate for the mothers' glands. Possibly some glands of internal secretion do not function in intrauterine life. Undoubtedly, the earlier in pregnancy thyroparathyroidectomy is performed, the longer the postoperative life. Results in this work may in a sense support the parathyroid theory in eclampsia. Direct evidence of heredity, an etiological factor in goitre, is shown in this series. In fetal pups, the left thyroid gland is almost always the larger.

Typhotuberculous Tuboovarian Abscess.—W. D. Fullerton's studies show that in posttyphoid pelvic abscesses, *Bacillus typhosus* probably plays a more important rôle than is suspected, and careful inquiry into the past history for typhoid infections, together with careful examination of all pus from pelvic abscesses, will bring interesting results. Puerperal infections coincident with, or shortly following a typhoid infection, may often have the typhoid organism as the causative agent, and the simplest and most plausible mode of infection is by way of the blood stream. Hexamethylenamine, which has proved so useful in preventing posttyphoid cystitis, cholecystitis, etc., though its excre-

tion by the uterine and tubal epithelium has not yet been proved, may be found useful, at least in the prevention of such a posttyphoid complication.

Simplifying and Making More Accurate the Closure of the Posterior Edges of the Wound Margin after Excision of Saddle Ulcer of the Stomach.—Williams employs a method of closing a gastric ulcer excision which he believes to be original with him. The usual method of closure is used throughout, except that on the posterior surface the peritoneal apposing suture passes through all the coats of the stomach, being passed from the inner side, which greatly simplifies the placing of this layer. It has been shown by numerous observers that, while theoretically such a suture is contaminated by the contents of the viscus, practically and clinically such contamination may be disregarded, especially when dealing with the stomach.

Proceedings of Societies.

THE MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Meeting Held in Brooklyn, December 2, 1912.

Dr. ROBERT E. COUGHLIN, Chairman for the Borough of Brooklyn, in the Chair.

Abdominal Pain.—Dr. JOHN MCQUILLIN said that the question of pain and its relief was ever before us for our solution, and upon a correct diagnosis and the appropriate treatment depended the comfort, and perhaps the lives, of our patients. In considering abdominal pain he would, for lack of time, confine himself to a few of the more common causes. 1. In acute invagination, the pain gradually increased until it became intense and unbearable. Frequently it could be localized at a definite place, which generally corresponded to the point of invagination. In intussusception of the large intestine the pain and reaction phenomena were the most intense, the symptoms of incarceration increasing rapidly, while in other varieties they had a more paroxysmal character, which was apparently associated with strong peristaltic movements. The abdominal muscles were tense and cramped during the attack of pain, but became soft during the intervals. Vomiting was frequent, and began comparatively early. The vomitus at first consisted of food, and later of mucus and bile, and finally might be mixed with blood. All these symptoms might be met with in other conditions, but the discovery of a sausage shaped tumor pointed strongly to intussusception and should be treated surgically. 2. In many cases with symptoms of chronic indigestion the primary trouble was situated in some organ other than the stomach. The trouble might be due to some condition of the appendix, to pericolitis, to galistones, or to disease of the pancreas; and where there were recurrent attacks of indigestion not responding promptly to treatment a careful examination of the abdomen should always be made. In a large majority of instances we should be rewarded by finding the seat of the trouble, and, by appropriate surgical means, might save our patients from a life of semiinvalidism and ourselves from reproach. Such cases should be operated in. 3. The speaker then mentioned a case of ulcer of the stomach simulating gallbladder disease, and, 4, one of acute cholecystitis, also to be treated surgically. These four illustrations showed the uselessness of treating such cases with drugs.

There was a group of conditions such as ulcer of the pylorus, with or without secondary stenosis, recurrent chronic cholecystitis, the gastric crises of tabes, and gastric neurasthenia, which would tax the skill of the best internist; and in many instances it would be necessary to observe the patient over a long period of time in order to arrive at a correct diagnosis. With rest in bed, the employment of blood tests, and appropriate diet, the diagnosis would usually be cleared up in time; so that the case would resolve itself into either a medical or a surgical one, and the proper treatment given would result in a cure. If this rather rambling paper had any value, he believed it was because it showed the necessity for a closer cooperation between the medical man and the surgeon in cases of abdominal trouble. It was not to our credit as physicians to treat a case of supposed indigestion for a number of years without relief and then have the patient leave us and be permanently cured when some other man took out the diseased appendix or removed some gallstones; neither would it add to the surgeon's reputation if he operated to relieve a supposedly diseased organ and found that the origin of the pain was a simple neurosis. Such mistakes would be fewer in number if we were more painstaking in our examination of the abdomen and would consent to an early interchange of ideas with our surgical confrères.

Dr. EARLE H. MAYNE said that the correct interpretation of abdominal pain was of such importance that the matter should receive the most careful consideration by the surgeon. He should be familiar not only with the pains associated with surgical diseases, but with those resulting from medical ailments as well, in order to be able to differentiate them. The subject was so large that he could call attention to only some of the more important points of interest to the surgeon. The significance of abdominal pain depended upon its location, character, and severity, when viewed in connection with the clinical picture in each case. In many of the surgical affections of the abdominal organs the accompanying pain was quite characteristic. Susceptibility to pain differed greatly, and the personal équation of each individual should be known to the surgeon if he would estimate properly its bearing upon the particular case. It was not necessary to enumerate the varieties of abdominal pain, nor to describe the various locations in which we found it. As a rule, the seat of the pain corresponded with the causative lesion, but to this there were a good many exceptions. In most of these surgical affections the pain was pretty generally diffused over the abdomen in the beginning, and later on became more or less localized. The Mayos had shown that both acute and chronic pancreatitis were much more common than had been supposed. In 4,000 cases of gallbladder disease operated in in their clinic up to February, 1911, 359 such accidents occurred. Whenever the upper abdomen was opened for gallbladder or other affections, a careful examination of the pancreas should therefore be made. The head of the pancreas was the portion usually affected, and where this was found to be the case, thorough drainage of the pancreatic ducts, through the common duct, should be carried out. The ptoses of the abdominal organs, especially of the kidneys, produced a variety of pains which often led to confusion as to the diagnosis; and a most careful investigation should be made in all those cases where the pain could not be clearly defined by the sufferer. A ruptured ectopic gestation sac was another condition which was frequently mistaken for other abdominal lesions. Within the past year Doctor Mayne had seen one such case diagnosticated as cholecystitis, and in this the upper abdomen was opened before the real condition was recognized. The abdomen had been opened a number of times where an overdistended bladder or a normally pregnant uterus was the only tumor found. These last were inexcusable errors. They showed, however, how important the correct interpretation of abdominal pain was. In one of the best clinics in this country, where the equipment was complete and the diagnostic ability of the best, the records showed that in fifteen per cent. of their cases which came to operation, the findings upon the operating table revealed that the preoperative diagnosis was wrong, in part or in whole. Abdominal pain, therefore, while of great assistance in making a diagnosis, should be considered only in connection with every other available aid at their disposal. Among these means he would place special emphasis upon the value of the blood count. In an experience of nine years with it, in hundreds of cases, he had found it of great assistance in clearing up the diagnosis.

Dr. RODERICK BYINGTON said that the subject of abdominal pain had been treated of thus far almost wholly from a surgical standpoint, but its medical aspects were no less important. It was necessary, for instance, that the physician should be able to distinguish the pain from gastric

ulcer and that due to hyperchlorhydria. Pain was the most characteristic symptom of ulcer. It was usually localized at one point, from which it radiated to the back; where it was often more severe than that in the epigastric region. It was also aggravated by movement of the body. The pain from hyperchlorhydria did not thus radiate. It came on two or three hours after the ingestion of food, and could be promptly relieved by the administration of albumins and alkalies. A diagnosis should not be based simply on the location of the seat of pain. Not infrequently a diaphragmatic pleurisy, with or without pneumonia, had been mistaken for appendicitis, especially where there was muscular rigidity, one of the most common signs of the latter. In a paper read before this association last spring Dr. Kerr had stated that in looking over his records for a single year he found that in no less than sixteen cases in children the diagnosis of appendicitis was positively made where the real condition was lobar pneumonia in twelve of them, indigestion in two, distended bladder in one, and intestinal parasites in one. Another condition liable to be mistaken for appendicitis was typhoid fever, and in some cases of this the resemblance was striking. The abdominal pain was most marked in the region of the appendix, and, in addition, there was rigidity of the right rectus. Here, however, the blood count would be of essential service in making the differential diagnosis. Other conditions also closely simulated appendicitis, and to arrive at a correct diagnosis sometimes involved the use of every known method of investigation.

Doctor White said that wherever there was pain there was congestion at the seat of pain. The significance of abdominal pain was of great importance, and in dealing with it much assistance might be rendered by keeping in mind the classification of pain. This should be classified as follows: 1, Inflammatory. If the inflammation was superficial, the resulting pain could be readily understood, but if it was deeply seated we had to refer back to the seat of inflammation; 2, pressure pain; 3, stretching pain, such as was met with in displacement of the kidney; 4, neuralgic pain. The pain in the crises of tabes was of this character, and it might be associated with gastric inflammation; 5, wandering or indefinite pain. This was the hysterical variety, and it was frequently confusing. The classification of pain in this way enabled us to give to pain its true value.

Dr. Ransford E. Van Gieson said that occasionally there was met with a posttyphoid condition accompanied with much pain which occurred some months after recovery from the fever and was due to constricting bands in the small intestine. Personally, he had seen, in consultation, two cases of this kind. The pain was severe, but there was no rise of temperature. No blood count was taken, as the cases occurred before this useful aid was resorted to. He remembered, however, that Dr. Alonzo Clark had pointed out that such adhesion bands might form after typhoid. One of these cases was sent to St. Catharine's Hospital for operation, and when the abdomen was opened an intestinal stricture was found and relieved.

Doctor McQuillin said that three years ago, just after returning from a trip to Bermuda, he was taken with typhoid fever; but, from the pronounced pain in the right side, both his attending physician and he himself believed that he had appendicitis, until Doctor Bristow showed that this was not the case. By the recognition of the real origin of abdominal pain patients could often be spared much unnecessary suffering. Recently he was called to see an old lady who had gallstones; and he found that she had suffered from this condition for thirty years. In another case, where the patient was suffering from renal colic, one physician had told her that the trouble was pleurisy, and another, indigestion. The lesson was, therefore, that they should examine every case with the greatest care.

How the Present Hospital Situation Affects the General Practitioner.—Dr. Thomas Dixon first gave an interesting sketch of the history of hospitals and then proceeded to say that the present executive management of hospitals in general was just the same as that which was in vogue more than fifty years ago. Exceptions, however, should be made as to those under ecclesiastical control, which reported directly to the church or religious society to which they belonged. Owing to the zeal of charitably disposed people, there was now in Brooklyn an oversupply of hospitals; so that they found themselves in the amazing situation of having a competition among these institutions to get, not only pay patients, but charity ones. This condition of affairs was an amusing one to the public, as the pauper was welcomed by the superintendent and registrar; for the more patients shown in their annual reports, the less likely they were to lose their positions. No one in the community needed to pay for medical or surgical attendance unless he so desired. There was no adequate investigation of applicants to hospitals or dispensaries as to their ability to pay; yet what would be thought of a merchant who gave a line of credit to a prospective customer without first consulting Bradstreet's? This was certainly a starving proposition to the general practitioner, and even in the case of those physicians holding hospital positions their private practice was being ruined by such a system. The public could not be blamed for taking advantage of this situation, for it was human nature to refuse to pay for something which one saw others receiving for nothing. Another cause of complaint was the matter of consultations, and in this connection the speaker gave a suppositious illustrative case, in which the influence of a family physician became completely undermined (so that he was no longer employed by the family), through having to call in a surgeon and send his patient to a hospital to be operated upon; he himself being obliged to be only a spectator at the operation, and not permitted to have anything to do with the aftermanagement of the case. Troubles in the profession, he went on to say, were not entirely confined to the general practitioner. It was the constant complaint of those on hospital staffs that the chief surgeon did all the operating. To be sure, he was responsible for the work of his staff, and he might have some men on this who were constitutionally unfit to operate; still, where there was such general complaint of this kind, there must be some reason for it. How could one operate if the opportunity to do so were never offered him? There were men who had been on our hospital staffs for years, and yet had never had a chance to perform any but the most trivial operations.

The remedies for present conditions which were proposed in the paper were: 1. There should be a State board of surgeons, appointed by the Governor, before whom the general practitioner could go and pass a clinical examination; receiving from such board a certificate entitling him to free material for operative work in any charity hospital in the State. 2. There be no combination hospitals—that is, they must be either pay or free hospitals. 3. All applicants for medical or surgical positions in hospitals, and all applicants for promotion therein, should pass an examination before a State board of surgeons. 4. The superintendents and registrars of hospitals should be compelled to take a civil service examination. 5. All applicants for free treatment at hospitals should be adequately investigated as to their financial condition, and this investigation should be in the hands of those not interested in the hospital management.

In concluding, the speaker said he would be extremely regretful if any of those present should think the purport of his paper was to condemn hospitals *per se*, for we might well be proud of them and of the skillful men composing their staffs, who were constantly making great sacrifices for the welfare of the public. The medical and surgical part of our hospitals left nothing to be desired, but the business end of these institutions could not be too strongly condemned. Any system of management which could permit favoritism and selfishness to be controlling features must fail. In the past fifty years great changes had come in every line of human endeavor; yet hospital management was just the same as it had been half a century ago. The medical profession was the laughing stock of the business world and the public press on account of their business methods. Altruism had been overdone in the profession. They not only did harm to themselves by the giving of indiscriminate charity, but they did harm to the people at large by sapping their independence. For the great services they rendered the community they were entitled to a dignified position therein.

Dr. John C. MacEvitt said that the subject of Doctor Dixon's paper was particularly apropos of the agitation now existing regarding the economics of the medical profession. He desired to state in advance, however, that he was not wholly in accord with the prevailing pessimistic sentiment as to the material status of the profession;

though it was possible that his views might be influenced by two factors which blinded him to the real hardships of the general practitioner. In the first place, his work was chiefly along general lines, and, second, he was among those favored with hospital appointments. Therefore, he was compelled to judge from exterior appearances. The general practitioners he met at the medical societies, clinics, clubs, and throughout the city, bore evidence in their dress and manner of prosperity. It was seldom that one would see a doctor's sign on other than a comfortable residence, and it was a constant and pleasing surprise to him to see the great number of young practitioners driving autocars. It might be answered that it was necessary to affect the appearance of prosperity to obtain a clientèle. He would acknowledge that this had a secondary effect, but patients were more impressed by skill than by outward show. The speaker here referred to the discouraging replies he had received from those to whom he presented letters of introduction, on coming from the west thirty years before, when he consulted them as to the advisability of settling in Brooklyn. The reception which he met showed that the same complaint existed then. There was no doubt, however, that there were abuses which prevented a proper ratio between the present incomes of physicians and the cost of living. They were so complex in character that their correction would be by slow degrees, and must be initiated by themselves, and at once, if they hoped to live to see them abolished, or at least modified. The trouble with them was that they met and talked and talked, but did nothing. As to the lodge practice, he did not believe that anything could be effected. Its connection rested entirely with the profession, but it was such a cancerous growth, with roots so firmly implanted and so universal in its spread of surface, that to his mind its removal was impossible. The ten cent doctor they could charitably forgive, for only compelling want could induce anyone to engage in such work. The various cults and pathies were but fungous growths which would disappear beneath the sunlight of knowledge. They had left, then, the so called hospital abuses, which he was free to confess could be abolished to the advantage of not only the general practitioner, but the whole profession as well. But they must consider the difficulties they would be compelled to surmount to produce any radical change in the existing hospital conditions. They must combat the State, county, and municipality, as well as religious interests of great monetary power. As to Doctor Dixon's proposal that hospitals must be either pay or free, Doctor MacEvitt said he was not quite clear as to the doctor's meaning. The State and county hospitals were for the benefit of the very poor, and could be excluded from consideration as harmful to the interests of the practitioner if they were properly supervised. He took it for granted that the change desired applied to the sectarian and endowed hospitals. These institutions were compelled, for financial reasons, to accept pay patients. But few of them were free from debt, and many had a hard struggle for existence. If they were made free hospitals they would be put into bankruptcy, and if they were made pay hospitals they would become private instiutions, and all appeals to the charitable on their behalf must cease. An ideal solution to the doctor's problem would be for each sect to levy upon its church for the maintenance of a strictly free hospital, denying its aid to none. Physicians could be paid for their attendance, as some were now paid in orphan asylums. Doctor Dixon's proposal to allow those who had obtained a certificate from its State board of surgeons to operate in hospitals in one sense negatived the other, unless he admitted the failure of the latter's accomplishment. In fact, several of the largest hospitals in the city had already opened their doors to competent operators not belonging to their staffs. If it could be made feasible, he saw no objection to the proposed plan. It would inspire many to render themselves competent to perform operations when such a demand arose, though it required long practice and experience to acquire a proper surgical technic.

Dr. Algernon T. Bristow said he could not quite agree with Doctor MacEvitt in his rosy colored view of the situation. It was indeed true that some of the members of the Kings County Medical Society looked prosperous and rode in their own automobiles, but it was also a fact that much more than half its members never attended the meetings. Of the membership of the New York State Medical Society, only from ten to fifteen per cent. went to its meetings, and to that of the American Medical Association, only about nine per cent., even when the meeting was held in such a place as Atlantic City. Furthermore, of the 105,000 physicians in the country, only 30,000 belonged to the latter association. From all this we could infer that those who had not made good in their profession were in the majority. It seemed to him a mistake to assert that chief surgeons were in the habit of monopolizing all the operations. It was not so at any of the hospitals with which he was connected, and in his own case his assistants were allowed to take all the emergency cases. If a subordinate did not get a chance to have operative work, there was probably always a good reason for this. As to the remedies proposed for hospital abuses, it might be premised that a remedy which was neither applicable nor procurable was not a remedy. The hospital systems in the United States and in Europe were different, on account of the difference in the governments. The European hospitals were originally religious institutions, because of the union between Church and State, and in London most of them had been established on the ruins of old priories. In France and Germany they had State hospitals, maintained and managed by the State, but here, with the exception of those for the insane, we had no State hospitals. Doctor Dixon's plan involved the upsetting of a system two hundred years old. All the hospitals would have to be State institutions, financed by the State, and that was a pretty big proposal. As to his proposed board of surgeons, the path to real surgery lay through the dissecting room, and the demonstrator of anatomy and every prominent surgeon had acquired his skill in this way. There was no royal road to surgery. Almost any one could do an ordinary operation, but it was only experience with cases of difficult technic that made the finished surgeon. The test of a surgeon was his ability to do something; but, in such an examination as that mentioned, the examination would be little more exacting than that through which the candidate had passed when coming up for his degree, and a purely theoretical examination was not worth anything. The admission of so many men to operate in the hospital would lead to endless confusion. Even under present conditions, with the considerable staffs of attending surgeons, it was sometimes difficult enough to get the proper service from the house staff. Again, an outsider thus coming in to operate, would be responsible only for the case or cases which he himself treated; yet every hospital was required by law to provide reasonable skill on the part of its surgeons and was held responsible for any shortcomings in this respect. Under these circumstances the hospital might be ruined, and, at all events, it would lose its function as a teaching institution. The outsider would be entirely irresponsible, while under their present system of hospital management any man who proved himself incompetent could be promptly discharged. It seemed, therefore, that the remedies proposed in the paper were worse than the disease.

Dr. C. F. Mack said that the medical department of a hospital was certainly quite as important as the surgical, and in medicine as well as in surgery there was no royal road to success. It was only by hard work that a man got his position in the profession. It was through the work accomplished in hospitals that scientific medicine had reached its present advancement, and he agreed with Doctor Bristow that Doctor Dixon's plan would ruin the hospitals as to their teaching function. Medicine was not a commercial calling, although, unfortunately, many men appeared to enter the profession with that idea, and the real student of medicine was willing to starve in order to acquire adequate knowledge. It was much more difficult, he believed, to manage a case of pneumonia or typhoid fever properly than to perform an ordinary appendectomy.

Dr. Benjamin M. Briggs said that surgery was made too prominent nowadays, and that the time had come when the medical man must assert himself. Those who took care of the health of the community were worthy of the respect and confidence of that community, and they should not rest in their efforts until the relations which formerly existed had been restored.

Doctor Dixon said that Doctor MacEvitt's optimism was always pleasant to hear, but as to the prosperity of the doctors, it was no doubt the fact that this was often simulated in order to make a favorable impression. Unquestionably there was at the present time much financial

distress among the profession. It was true, as had been stated, that if his plans were to be carried out it would be bad for the private hospitals, but would it not be better that these institutions should become bankrupt than that the medical profession should? As to the examination by a board of surgeons, he believed that by means of the cadaver, etc., this could be made sufficiently practical to accomplish the desired purpose.

Dr. Reynold Webb Wilcox, the president, referring to the Pennsylvania Hospital, some account of which had been given by Doctor Dixon in his paper, said that no medical man visiting Philadelphia should fail to go to see it, as there was so much of interest to be met with at this venerable institution that one might profitably spend a whole day there. As to the problems concerning hospitals in general, there was nothing new about the present situation. He had in his possession a pamphlet printed in London, in 1786, which was written by Dr. Thomas Skeete and the title of which was: An Exact Representation of the Very Uncandid and Extraordinary Conduct of Dr. John Coakley Lettsom, as well Previous to, as on, the Day of Election for Physician to the Finsbury Dispensary; with Some Remarks on the Establishment of a New Finsbury Dispensary. Doctor Wilcox then said that he could assure Doctor Bristow that it was entirely feasible and practicable to conduct satisfactorily a hospital in which physicians and surgeons from outside were permitted, under suitable conditions, to take charge of and operate in their own cases. This had been conclusively shown at St. Mark's Hospital, with which he had been connected for the past twenty years, and where for fifteen years he had been president of the medical board. Here the plan had worked with perfect success, and he believed that it could be carried out elsewhere equally well. What was needed in such an institution was a strong man at the head of the management, who was not afraid to say No; so that undesirable physicians and undesirable cases could be excluded. It was his opinion that all medical men who were in the public service, such as police and fire department surgeons and physicians connected with the health department, should be paid an adequate salary and prohibited from engaging in private practice, as was the case with those in the United States Public Health Service.

Letters to the Editor.

STERILIZING THERMOMETERS.

Akron, Ohio, *April 5, 1913.*

To the Editor:

The suggestion of Doctor Jameson as to sterilization of thermometers is very sensible. Instead of alcohol, why not drop one bichloride tablet into the cleansing glass of water? This has been my practice always.

A. S. McCormick, M. D.

HEALTH WORK IN ASHEVILLE.

Asheville, N. C., *April 5, 1913.*

To the Editor:

I have read with pleasure the editorial article in your issue for March 20th entitled Typhoid Eradication. I notice you refer to the splendid work done by the Health Department of Jacksonville, Florida, which is worthy of all commendation. However, our work here seems so much better that I am taking the liberty of giving you the statistics for the past three years.

	1910	1911	1912
Importations (3 weeks)	30	13	7
Contact at home (2nd in house)	12	15	2
Butterman	2	7	2
Unsanitary conditions (wells, etc.)	66	20	1
Untraced	9	5	2
Carriers	00	00	1
	119	60	15
Deaths	4	1	0

L. B. McBrayer, M. D., Health officer.

Book Reviews.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

The Surgical Diseases of Children. By William Francis Campbell, A. B., M. D., Professor of Anatomy, Long Island College Hospital, and Le Grand Kerr, M. D., Attending Pediatrist to the Methodist Episcopal Hospital, etc. New York and London: D. Appleton & Co., 1912. Pp. xxviii-693.

The object of the authors has been to write a book applying modern surgical principles and procedures to the child. Continued experience in surgery has brought out many striking peculiarities of children in their reaction to surgical diseases and operations. A description of these peculiarities and practical deductions for purposes of treatment give sufficient excuse for a book devoted to this subject. It has been a wise plan for a surgeon to unite with a pediatrist in the preparation of a work of this kind. Each of the two brings to the task a special knowledge and experience which, in combination, covers the border lines of medicine and surgery. The book is divided into a general and a regional part and thus conforms to the best practice of the day. One finds, however, many repetitions which unnecessarily increase the size of the book. For example, the general part contains a chapter on fractures in children, describing special ones peculiar to them, and again, in the regional portion in the chapters on the extremities, the subject of fractures is again taken up and these same fractures are described. This is true of other subjects and the result is that the book lacks conciseness. The illustrations are very numerous and with few exceptions good. There is a noticeable absence of x ray pictures, which, on account of difficulties of diagnosis, are important in children especially in the field of fractures.

Mechanical Vibration. Its Physiological Application in Therapeutics. By M. L. H. Snow, M. D., Professor of Mechanical Vibration Therapy in the New York School of Physical Therapeutics, etc. New York: The Scientific Authors' Publishing Company, 1912. Pp. xvi-476. (Price, $4.50.)

Step by step, progress is being made in a knowledge of the efficiency, trustworthiness, and scientific reasonableness of mechanotherapeutic measures. This new edition of Dr. Arnold Snow's book on vibration marks a long stride forward. It is full of information available for any one interested in relieving human ailments. Chapters v, vi, and vii are practically new and contain up to date data on physiological effects of mechanical stimulation especially on diagnosis, replete with the latest observations of physiologists and specialists making for the solution of a host of clinical problems, in particular those broader ones which may be described as grouped phenomena, symptom complexes, etc. The chapter on the heart, blood-vessels, and ductless glands (No. vii) affords data with which no practitioner can afford to be unfamiliar, whatever his leanings in the way of treatment. Read aright and judiciously utilized, the information presented will go far toward elucidating many complex morbid conditions.

All real progress in medical science makes for simplification in principles of action and reaction, and improvements in securing perspective on the relative significance of symptoms and their relief by omitting no essential points. Say what one may please about the vaporings of the bone adjuster cults, one good thing they accomplish: Clinicians are compelled by their success to take broader viewpoints of somatic processes, both in functional derangement and graver disrepair; to adopt newer and better generalizations about subacute and chronic disorders. They have drawn attention to the practical value of considering the question of demand and supply of blood, local and general, and its distribution by mechanical stimulation.

Much good literature is accumulating dealing with methods of influencing stases, the ebb and flow of body fluids, reflex phenomena, effects of contraction and dilatation of vessels, hollow viscera and the like. Of all this Doctor Snow has skimmed much of the cream. Whether one is equipped with vibration apparatus or not; prefers one or

another form of applying mechanical stimulation; the physiological and clinical facts set forth in this book will afford excellent reading.

The Diseases of the Skin. By Willmott Evans, M. D., B. S., F. R. C. S., Surgeon to the Royal Free Hospital. With Thirty-two Illustrations. London: Hodder & Stoughton and Henry Frowde (University of London Press); New York: Oxford University Press, 1913. Pp. xiv-375. (Price, $3.75.)

This volume differs from several recent works in the same field in the absence of unnecessarily thick paper, waste margins, heavy and superabundantly leaded type, and other evidences of padding. Its 375 pages are filled with condensed information; and while naturally such narrow limits for a field so large render it essentially a textbook for the student, the practitioner will find it valuable as a ready reference book for information. Criticism may be made of the illustrations, some of which are not at all distinct or characteristic, while others are reproductions of the time honored figures that have appeared in English textbooks since the time of Erasmus Wilson, as those of favus and lupus vulgaris. On the whole, however, it is a useful and handy volume for the practitioner who only occasionally treats skin diseases and requires his information on the subject in readily accessible form.

Heredity, Evolution, and Vitalism. By Ronald Campbell Macfie, M. A., M. B., C. M. New York: William Wood & Co., 1912. Pp. vi-302. (Price, $2.50.)

It is stated by the author that his endeavor has been to expound scientific facts, and also to indicate certain novel conclusions to which they seem to lead—conclusions which so far appear to have escaped notice, and which are nevertheless of the greatest philosophical and theological importance. He points out that recent biological discoveries have quietly undermined the foundations of Darwinism, and have suggested other evolutionary principles, which render it again possible to believe in special creation, and even in the special creation of man; and he outlines a new theory of evolution which seems to him to be in accordance with present biological knowledge. Of the various theories of heredity Weismann's is accepted as the best working hypothesis that has yet been proposed. Darwin and his theories come in for special criticism, the author stating that the desire of Darwin was to escape from the miraculous and preternatural, and to substitute for design and forethought the automatic working of a mechanical system. Darwinism itself is pronounced dead in several different ways. Woman suffrage is also attacked vigorously. The modern cry for equality, the desire of certain modern women to participate in all masculine activities, are simply signs and symptoms of organic abnormality and deficiency. What a blow to the cause! In the final chapter the question of immunity to disease is discussed. If the author showed a better understanding of many of the clinical manifestations and underlying pathological conditions his ideas might be taken more seriously. As it is they do not carry much weight. This volume is interesting and valuable in its presentation of the author's views, but it does not seem to be free from prejudice.

Minor Surgery. By Leonard A. Bidwell, F. R. C. S., Senior Surgeon to the West London Hospital. Second Edition, Revised and Enlarged. With One Hundred and Twenty-nine Illustrations. London: Hodder & Stoughton and Henry Frowde (University of London Press); New York: Oxford University Press, 1913. Pp. xvi-299. (Price, $3.75.)

Those familiar with the first edition of this short work had reason to believe that it would meet a need. The appearance in a year of a second edition has justified this belief. The author has produced an eminently practical treatise on the subject, based on wide personal experience. The language is concise and definite, and gives the reader the feeling of authority. Very few alternative methods of treatment are given, as the writer has desired to describe only that one upon which his experience has been based. One finds every page bristling with practical points, which cannot fail to be of great value to the practising physician. The new edition has, without becoming much larger, a considerable amount of new matter, as well as fresh illustrations. It is very much to be regretted that the untimely death of the author, before the publication of this edition, will prevent the appearance of further editions from his pen. It may be confidently predicted that the book, in its present revised and improved form, will find many new readers in this country as well as in England.

Diseases of the Throat, Nose, and Ear. By W. G. Porter, M. B., B. Sc., F. R. C. S., Surgeon to the Eye, Ear, and Throat Infirmary, Edinburgh. With 77 Illustrations, 44 in Colors. New York: William Wood & Co., 1912. Pp. xii-275. (Price, $2.50.)

The author has attempted merely to present a good working book for the practitioner and the senior student, and a perusal of the contents will demonstrated how successfully he has followed out the plan as outlined in the title pages. The various subjects are treated only in such detail as to permit the general practitioner to arrive at a satisfactory diagnosis and to execute any of the more simple treatments. The advanced technical discussions, therefore, are not included within these pages, thereby placing the subject matter within easy reach of the nonspecialist. The seventy-seven illustrations, forty-four of which are colored, are of material value from a diagnostic standpoint.

Pathologie und Therapie der Lungenschwindsucht. Von Prof. E. Aufrecht in Magdeburg. Zweite Auflage. Mit 11 Abbildungen und 1 Kurventafel. Wien und Leipzig: Alfred Hölder, 1913. Pp. vii-329.

Although some seven years have passed since the appearance of the first edition, Professor Aufrecht maintains his original position. In discussing the origin and the anatomical processes in tuberculosis of the lung he holds that infection takes place through the tonsils, the bacilli passing from the tonsils, cervical and mediastinal nodes to the terminal pulmonary vessels. The respiratory theory is referred to as being entirely unproved. The author next takes up the conditions giving rise to the appearance and complete development of the disease, then the diagnosis, and finally the prophylaxis and treatment. The author believes that in the human lung the bacilli first injure the vessel walls, their elements are stimulated and proliferate, and it is from here that the necrosis of the peripheral portion of the diseased vessel proceeds. Some eighty pages are devoted to the presentation of this belief in a manner that is quite convincing. The remaining portions are well done, and the publication is one that can be recommended.

Essai sur le traitement des cystites par l'enfumage iodé. Par le Docteur Gaston Farnarier, de la Faculté de Médecine de Paris. Paris: La Semaine médicale, 1912. Pp. 45.

This essay is a report of cases of cystitis treated by injections into the bladder of iodine vapor. The author has found the treatment to be of particular value in tuberculous cystitis and reports a number of cases in which, after several treatments, cystoscopy and ureteral catheterization could be performed. It includes a short bibliography.

Health and Longevity through Rational Diet. Practical Hints in Regard to Food and the Usefulness or Harmful Effects of the Various Articles of Diet. By Dr. Arnold Lorand, Carlsbad. Philadelphia: F. A. Davis Company, 1912. Pp. x-416. (Price, $2.50.)

Doctor Lorand's book is one that contains much valuable information presented in a very interesting manner. As a rule, publications dealing with diet consist largely of chemical formulæ and tables of food values as expressed in calories, important, but not easy reading. The author calls attention to the value of common sense as applied to eating; because overeating may prove harmful is no reason why one should starve. Then, too, one must take into consideration that different kinds of food must be used according to the varying kinds of work that are to be performed. This method is carefully employed when lower animals are concerned, but not with man. The most important parts of this book are those dealing with the preparation of food. Doctor Lorand includes this because, "through unintelligent and, one might almost say, brutal methods of cooking, many important nutritive substances

and salts are withdrawn from our foods." It is difficult to pick out any particular chapters as being of more importance than the others; but those dealing with the influence of food upon man and the increased activity of certain functions brought about by food are especially interesting. The chapter giving hints for those obliged to take their meals in restaurants will be found both amusing and interesting. Throughout the book the author lays much stress on the relation of the thyroid gland and its secretions to eating. This publication can be highly recommended.

Lehrbuch der Augenheilkunde. Bearbeitet von Professor AXENFELD, Professor BACH, Professor BIELSCHOWSKY, Professor ELSCHING, Professor GREEFF, Professor HEINE, Professor HERTEL, Professor VON HIPPEL, Professor KRÜCKMANN, Professor OELLER, Professor PETERS, und Professor STOCK. Herausgegeben von Dr. THEODOR AXENFELD, Professor der Augenheilkunde, in Freiburg. Dritte Auflage. Mit 12 lithographischen Tafeln, 3 Farbendrucktafeln im Text und 554 zum grossen teil mehrfarbigen Textabbildungen. Jena: Gustav Fischer, 1912. Pp. xvi-761.

The first edition of this work appeared four years ago, the second and third at intervals of two years. Such a rapid succession of editions is an evidence of the demand for books of this character, while the revisions made by the various authors to keep their writings abreast of the times attest the advance continually being made in ophthalmology. A number of useful illustrations have been added to the many already present, which form a feature of great value. The general style is that of a book of reference, in that various subjects have been dealt with by different authors, yet it is well fitted to be a textbook for students, because of the conciseness and clearness with which each writer has done his part. It may seem invidious to call particular attention to one article where all are so excellent, but we should like to commend Elsching's presentation of the subject of ophthalmoscopic diagnosis, as it groups all of the diseases of the fundus in an easily comprehensible classification.

Miscellany.

Medical Inspection of Private Schools.—Many thousands of dollars are paid out yearly by our cities for the medical inspection of the children in the public schools, and this work has grown in amount and scope till we feel that there is little danger of widespread and uncontrolled epidemics of the contagious diseases. The department of health has detected many an outbreak of measles or diphtheria or scarlatina in its incipency and crushed it out. The teachers, too, in our public schools have become accustomed to recognize symptoms both of disease and of defect, and often it is they who quarantine some suspected child before the arrival of the inspector assigned to that school.

How is it, however, with the private schools? asks Dr. Theron Wendell Kilmer, in an editorial article in the *Archives of Pediatrics* for March, 1913. Do they have medical officers, and do they watch for contagious diseases, or point out to well-to-do, but not too careful parents the mouth breathing or the crooked backs of their children? Some of them do have such officers, and the work of these men is often of the highest character, but many schools do not have the slightest protection in this regard. They seem to feel that it is not necessary for children of the well to do. In speaking to the head master of one of our largest private schools, it came out, in reply to a question whether he did not consider a school physician necessary, that inasmuch as his scholars came from the upper classes of society they were not thought to need regular medical inspection. Yet all of us can recall that private schools are closed each winter because of school epidemics, and that at the present writing there is an epidemic of German measles among the private schools, as there was one of grippelike colds earlier in the winter.

Such inspection should be a part of the regular routine of all schools, and the inspection should extend to fitness for gymnasium work and the hard, active play at recess. Many boys and girls are losing in weight and looking dragged out because they have to do too much, or are playing with comrades who are too big for their strength. Children never say "die" and it is only too common to see a thin, nervous boy with dark circles under his eyes hurrying through his meals or eating next to nothing, sleeping poorly, and giving a hemoglobin reading of fifty or sixty, who will do well when restrained, as might so nicely be done if his private school had the proper facilities for medical supervision.

Public Health Legislation.—The publication of the sanitary legislation being currently enacted by cities of the United States was begun in the issue of the *Public Health Reports* for March 24, 1911, and has been carried on continuously since that time. With the municipal ordinances there have been included sanitary rules and regulations which having been promulgated pursuant to law or ordinance have the force of law. The city ordinances and regulations adopted from January 1, 1910, to June 30, 1911, have been reprinted in a separate volume, rearranged under subjects with a table of contents and index in sufficient detail for purposes of easy reference. From time to time similar reprints will be made. The publication of the ordinances and regulations in the weekly issues of the *Public Health Reports* makes currently available to health officers and other sanitarians the sanitary measures and practices being currently adopted in municipal health work. The reprinting of them, rearranged under subjects and in volumes containing the measures adopted during a given period of time, will be of added value for reference and study. For any period the laws and regulations adopted will show the status and trend of municipal sanitary thought and practice. Beginning with the issue for November 29, 1912, State and Territorial laws and regulations pertaining to public health will also be published in the *Public Health Reports*. This will make readily available to health officers and other sanitarians current State legislation and will show the measures being adopted and the progress made by the several commonwealths. The publication of the State laws will serve the same useful purpose as that of the city ordinances, but will be of broader scope. The laws and regulations will be published as soon after enactment or promulgation as copies can be secured from the several State authorities.

Meetings of Local Medical Societies.

MONDAY, *April 14th.*—Society of Medical Jurisprudence, New York; New York Ophthalmological Society; Association of Alumni of St. Mary's Hospital, Brooklyn; Williamsburg Medical Society, Brooklyn; New Rochelle Medical Society; Corning Medical Association; Waterbury, Conn., Medical Association.

TUESDAY, *April 15th.*—New York Academy of Medicine (Section in Medicine); Psychiatric Society of Ward's Island; Tri-Professional Medical Society of New York; Buffalo Academy of Medicine (Section in Obstetrics and Gynecology); Medical Society of the County of Kings; Binghamton Academy of Medicine; Syracuse Academy of Medicine; Ogdensburgh Medical Association; Oswego Academy of Medicine; Clinical Society of the Elizabeth, N. J., General Hospital.

WEDNESDAY, *April 16th.*—New York Academy of Medicine (Section in Genitourinary Surgery); Woman's Medical Association of New York City (Academy of Medicine); Medicolegal Society, New York; Buffalo Medical Club; Northwestern Medical and Surgical Society, New York; New Haven, Conn., Medical Association; New Jersey Academy of Medicine.

THURSDAY, *April 17th.*—New York Academy of Medicine (stated meeting); German Medical Society, Brooklyn; Newark, N. J., Medical and Surgical Society; Aesculapian Club, Buffalo, N. Y.

FRIDAY, *April 18th.*—New York Academy of Medicine (Section in Orthopedic Surgery); Clinical Society of New York Postgraduate Medical School and Hospital; New York Microscopical Society; Brooklyn Medical Society; Alumni Association of Roosevelt Hospital; Saratoga Springs Medical Society.

Official News.

United States Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending April 5, 1913:

Baker, C. R., First Lieutenant, Medical Reserve Corps. Ordered to proceed to Fort Jay, N. Y., for temporary duty. **Bosley**, J. R., Captain, Medical Corps. Left Fort H. G. Wright, N. Y., on March 27th, for Columbus Barracks, Ohio, for duty in connection with flood relief work. **Clark**, J. A., Captain, Medical Corps. Left Plattsburg Barracks, N. Y., on March 27th, for Columbus Barracks, Ohio, for duty in connection with flood relief work. **Dickenson**, D. F., First Lieutenant, Medical Reserve Corps. Reports sick in Letterman General Hospital since March 15th, en route to Philippine Islands. **Etter**, H. B., Lieutenant, Medical Corps. Paragraph 30, Special Orders No. 55, March 8, 1913, revoked; resignation accepted to take effect March 29, 1913. **Hutton**, P. C., Major, Medical Corps. Arrived at Columbus, Ohio, on March 28th for duty pertaining to relief work. **Lyster**, W. J. L., Major, Medical Corps. Will proceed to Louisville, Ky., for duty pertaining to relief work. **Reddy**, J. J., Lieutenant, Medical Corps. Granted leave of absence for one month before sailing to the Philippine Islands on May 5, 1913. **Rhoads**, T. L., Major, Medical Corps. Reported at Dayton, Ohio, March 29, 1913, as chief sanitary officer of flood relief work. **Russell**, F. F., Major, Medical Corps. Will proceed to Front Royal, Va., to make sanitary inspection of remount depot. **Stayer**, M. C., Captain, Medical Corps. Left Madison Barracks, Ohio, for duty pertaining to flood relief work. **Wadhams**, S. H., Major, Medical Corps. Left Fort Porter, N. Y., March 27th, for Columbus Barracks, Ohio, for duty pertaining to flood relief work. **Wyaley**, A. M., Captain, Medical Corps. Returned to Fort Monroe, Va., March 27th, and left the same day for Columbus Barracks, Ohio, for duty pertaining to flood relief work.

United States Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy, for the two weeks ending April 5, 1913:

Allen, D. G., Assistant Surgeon. Detached from the Naval Recruiting Station, Richmond, Va., and ordered to continue treatment at the Naval Hospital, Washington, D. C. **Biello**, J. A., Passed Assistant Surgeon. Detached from the Naval Hospital, Mare Island, Cal., and ordered to the U. S. S. *Delaware*. **Buckley**, John, Assistant Surgeon. Ordered to the Naval Hospital, Mare Island, Cal. **Charlton**, C. F., Assistant Surgeon. Detached from the Naval Hospital, New York, N. Y., and ordered to the U. S. S. *Panther*. **Connor**, W. H., Assistant Surgeon. Detached from the Naval Hospital, Newport, R. I., and ordered to Washington, D. C., for examination for promotion. **Davidson**, A. B., Assistant Surgeon. Detached from the U. S. S. *Glacier* and ordered home to await orders. **Dragoo**, C. H., Assistant Surgeon. Detached from the Marine Expeditionary Force and ordered to the U. S. S. *Petrel*. **Findeisen**, W. E., Assistant Surgeon. Detached from the Marine Expeditionary Force and ordered to the U. S. S. *Wheeling*. **French**, G. R. W., Assistant Surgeon. Detached from the U. S. S. *Panther* and ordered home to await orders. **Jenkins**, H. E., Assistant Surgeon. Detached from the U. S. S. *Nashville* and ordered to the Marine Expeditionary Force. **Lynch**, C. P., Assistant Surgeon. Ordered to the Naval Hospital, Las Animas, Colo. **Lyon**, W. C., Assistant Surgeon, Medical Reserve Corps. Detached from the Naval Medical School, Washington, D. C., and ordered to the Naval Recruiting Station, Richmond, Va. **Minter**, J. M., Passed Assistant Surgeon. Detached from the Receiving Ship, Boston, and ordered to the Naval Hospital, Newport, R. I. **Murphy**, J. A., Surgeon. Detached from the Naval Training Station, Great Lakes, Ill., on April 15th, and ordered to the Navy Yard, Norfolk, Va. **Norton**, O. D., Medical Director. Detached from the Naval Recruiting Station, San Francisco, and ordered to the Naval Recruiting Station, Denver, Colo. **Osterhaus**, Karl, Acting Assistant Surgeon. Ordered to the Naval Recruiting Station, St. Louis, Mo. **Peck**, A. E., Surgeon. Ordered to the Naval Recruiting Station, San Francisco, Cal. **Post**, D. C., Assistant Surgeon. Detached from the Navy Yard, New York, N. Y., and ordered to the U. S. S. *Glacier*. **Riddick**, W. J., Assistant Surgeon. Detached from the U. S. S. *Wheeling* and ordered to the Marine Expeditionary Force. **Robertson**, G. E., Assistant Surgeon. Detached from the U. S. S. *Petrel*, and ordered to the Marine Expeditionary Force. **Stalnaker**, P. R., Assistant Surgeon. Detached from the Naval Hospital, Las Animas, Colo., and ordered to the Navy Yard, New York, N. Y. **Wood**, C. C., Assistant Surgeon. Detached from the Marine Expeditionary Force and ordered to the U. S. S. *Nashville*.

Births, Marriages, and Deaths.

Married.

Adcock—Russell.—In Warrensburg, Mo., on Saturday, March 29th, Dr. James Alfred B. Adcock and Mrs. Mary Sanborn Russell. **Chatard—Whelen.**—In Baltimore, Md., on Wednesday, March 26th, Dr. Joseph Albert Chatard and Miss Alice Marie Whelen. **Derby—Roosevelt.**—In Oyster Bay, N. Y., on Friday, April 4th, Dr. Richard Derby, of New York, and Miss Ethel Roosevelt. **Filipello—de Saisset.**—In San Jose, Cal., on Wednesday, March 26th, Dr. Eugene Avventino Filipello and Miss Henrietta de Saisset. **High—Miller.**—In Lebanon, Pa., on Monday, March 24th, Dr. Isaac B. High and Miss Mary J. Miller. **Peterson—Fletcher.**—In New York, on Wednesday, April 2d, Dr. Edward Wadsworth Peterson and Miss Mary Elizabeth Fletcher. **Stewart—Petrova.**—In Kansas City, Mo., on Monday, March 31st, Dr. John D. Stewart, of Indianapolis, Ind., and Miss Olga Petrova. **Talbot—Mugele.**—In Pittsburgh, Pa., on Wednesday, April 2, Dr. Robert J. Talbot, of Niagara Falls, N. Y., and Miss Margaretta Mugele.

Died.

Barnes.—In St. Louis, Mo., on Sunday, March 30th, Dr. Algernon Sidney Barnes, aged eighty-two years. **Bennett.**—In Owensboro, Ky., on Thursday, March 20th, Dr. C. E. Bennett. **Clift.**—In Kaysville, Utah, on Friday, March 28th, Dr. Frederick Clift, aged sixty-five years. **Davis.**—In Raybrook, N. Y., on Wednesday, April 2d, Dr. Joseph Davis, aged thirty years. **Delgado.**—In New York, on Monday, March 31st, Dr. Jose Manuel Delgado, of Brooklyn. **Downs.**—In Butler, Pa., on Thursday, March 27th, Dr. Edward L. Downs, aged fifty-four years. **Edwards.**—In Gloversville, N. Y., on Friday, April 4th, Dr. John Edwards, aged sixty-six years. **Egan.**—In Springfield, Ill., on Sunday, March 30th, Dr. James A. Egan, aged fifty-three years. **Folsom.**—In Fargo, N. D., on Saturday, March 22d, Dr. Edwin Folsom, aged seventy-one years. **Hall.**—In Shawmut, Pa., on Sunday, March 30th, Dr. George B. Hall, aged forty-six years. **Hasbrouck.**—In New York, on Tuesday, March 25th, Dr. Joseph Hasbrouck, of Port Ewen, aged forty-eight years. **Ingersoll.**—In Denver, Colo., on Sunday, March 23d, Dr. Mary A. Ingersoll, aged sixty-three years. **Jameson.**—In Moscow, Idaho, on Monday, March 24th, Dr. William Kirk Jameson, aged seventy-seven years. **Knowles.**—In Grand Rapids, Mich., on Tuesday, March 25th, Dr. Weston O. Knowles. **Little.**—In Brooklyn, N. Y., on Friday, April 4th, Dr. Frank A. Little, aged fifty-seven years. **MacDonald.**—In Red Bank, N. J., on Saturday, March 29th, Dr. John M. MacDonald. **McIntyre.**—In Louisville, Ky., on Wednesday, March 26th, Dr. Charles W. McIntyre, aged forty-seven years. **Martin.**—In Montreal, Canada, on Tuesday, April 1st, Dr. George Martin, aged thirty-one years. **Mead.**—In Watertown, Mass., on Sunday, March 30th, Dr. Julian Augustus Mead, aged fifty-seven years. **O'Brien.**—In Roxbury, Mass., on Sunday, March 30th, Dr. Denis A. O'Brien, aged forty-five years. **Potter.**—In Bethlehem, Pa., on Tuesday, April 1st, Dr. Zibah Hazard Potter, aged seventy-six years. **Richmond.**—In Passaic, N. J., on Monday, March 31st, Dr. Samuel Richmond, aged twenty-four years. **Vastine.**—In Catawissa, Pa., on Sunday, March 30th, Dr. George H. Vastine, aged forty years. **Zoller.**—In Fort Plain, N. Y., on Wednesday, April 2d, Dr. William Zoller, aged sixty-six years.

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Communications.

VAGINAL SURGERY.

A Contribution to the Science, with Report of Several Illustrative Cases.

BY SAMUEL W. BANDLER, M. D.,
New York,
Adjunct Professor of Diseases of Women, Postgraduate Medical School.

When in the hands of Dührssen, vaginal celiotomy first developed as a step in the correction of retroversion and retroflexion, the surgeon made use of the transverse incision below the lower border of the bladder in the anterior fornix, to which he afterward added a short longitudinal incision which, as the indications for the vaginal route broadened, gradually became longer, until now it is extended by me in most cases to within an inch of the external opening of the urethra. With this combined incision the bladder is thoroughly separated from contact with the anterior wall of the cervix and from its intimate relation to the anterior vaginal wall throughout a very wide extent, so that the bladder is practically free, except at its attachment to ureters and the urethra.

The early fixations of the uterus to the anterior vaginal wall brought the fundus in contact with the upper margin of the transverse incision, producing an extreme anteflexion in the uterus. As the longitudinal incision was introduced and was made longer and longer, the fundus became fixed higher and higher on the vaginal wall, in reality, however, extending lower and lower; that is, nearer the urethra. With the complete and thorough separation of the bladder from the anterior vaginal wall, the uterus, which has its fundus fixed close to the urethra, displaces the bladder so that it lies and rests on the posterior surface of the uterus.

THE DUEHRSSEN-BANDLER OPERATION.

To this fixation operation, the credit for originating which must, after all, be given in great measure to Dührssen, various important steps have to be added in order to make this procedure of any permanent value in correcting the varying degrees of descensus and prolapsus uteri. In these cases we have not only a retroverted uterus, but very often an enlarged and elongated uterus, a marked hernia in the anterior fornix, enterocele in the cul-de-sac of Douglas, proctocele, and total absence, in many cases, of any sort of support by the levator ani muscles.

In addition to fixing the anterior wall and fundus of the uterus to the anterior vaginal wall, the cervix must be removed in most cases in order to allow that end of the uterus to pass upward toward the hollow of the sacrum. A certain area of the anterior vaginal flaps must be resected, after the vaginal edges and the separated connective tissue have been united about the new external os in such a manner as to diminish the extent of the posterior fornix, previous to which, if necessary, varying areas of the peritoneal cul-de-sac of Douglas have been exsected. Our whole purpose here is to diminish the extent of the fornices of the vagina in the attempt to keep that end of the uterus in a position approaching that considered normal. Simple fixation of the fundus forward is positively insufficient in most instances to accomplish this purpose. When the uterus is in the vagina, delivered through the inverted T incision, it is possible to attach the lower areas of the posterior wall at the cervico-uterine junction to either the upper part of the broad ligament or to the infundibulopelvic ligament or to the broad ligament. Peritoneal plication in the region of the uterosacral ligaments only furnishes peritoneal support, and is a procedure which could not be of great help.

A high colpoperineorraphy, *associated with a resection of most or all of the posterior vaginal wall,* serves to narrow the lumen of the entire vagina, especially the upper half, and fixes the upper part of the new posterior vaginal wall to the upper border of the newly united levator ani muscles. Thus there is erected in the middle of the posterior vaginal wall a transverse fascial and muscular wall. Over or beyond this and the newly fixed posterior vaginal wall, the newly formed external os can scarcely pass. In other words, these procedures, together with the fixation of the anterior uterine wall, aid in keeping the cervix up where it belongs, which, after all, is one of the main essentials to a permanent cure of prolapse, no matter what method is tried. One of the essential points in the perineorrhaphy is the union of the levator ani or the fascial covered muscle on either side by three chromic catgut sutures and the union of the still remaining raw surfaces of the two halves by a figure of 8 suture and the superficial application of several interrupted chromic sutures, which unite in the median line the edges of the generous triangular shaped vaginoperineal denudation, forming in the median line a union of the lower half of the posterior vaginal wall and the whole external skin surface of the perineum.

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DUEHRSSEN-BANDLER OPERATION FOR MARKED DESCENSUS OF UTERUS.

Case I. Mrs. X., forty-seven years of age, with descensus of the uterus, that organ protruding beyond the vulva on pressure, associated with a very large cystocele, a decided enterocele, and proctocele, with complete absence of any perineal body. This patient was operated upon before the surgical congress, by the Dührssen-Bandler method. In addition to a vaginal fixation of the fundus of the uterus to the anterior vaginal wall, made with the aid of an inverted T shaped incision, there was a very high amputation of the cervix, a sewing of the posterior fornix and the pelvic connective tissue around the new external os, in such a way as to diminish the diameter of the anterior and posterior fornix. As a result of this, a considerable area of the anterior vaginal flaps was removed. The next step consisted of a resection of the posterior vaginal wall in its entire length and this was followed by the Bandler form of perineorrhaphy, which included three buried chromic sutures, to unite the levator ani muscles fascia and of the two sides in front of the proctocele, and an anchoring of the posterior vaginal wall at this point. The perineorrhaphy was completed by a figure of 8 stitch which served to bring the raw surfaces together in the middle line. The result was a perfect one.

THE VAGINAL ATTACK ON ECTOPIC GESTATION.

Within the last year I called attention to the value of the anterior vaginal incision in diagnosticating or excluding the existence of ectopic gestation. I was particularly interested in the anterior vaginal route, making use of the inverted T shaped incision. By this means the vesicouterine fold of peritoneum is very distinctly brought into view. Normally it has a yellowish pink color, especially so if intestines or omentum bulge into it. In all cases of ectopic gestation in which this path has been used for diagnostic purposes, exposure of this peritoneal fold divulged the typical bluish shimmer so often seen when the peritoneum is reached in an abdominal operation for ectopic gestation when there is free blood in the peritoneal cavity. As soon as the peritoneum was picked up and incised with the scissors, dark brown fluid, with or without clots, made its appearance. When the anterior speculum is introduced into the peritoneal cavity, clotted blood is seen or the introduced fingers enter an hematocele, or ovarian forceps, with or without the aid of sponges or the fingers, deliver the tube which contains the ectopic product into the vagina. This method has been tried successfully in nine cases, in all of which completion of the operation was, or could have been carried out at the same time. A sponge lost through opening a sponge holder made it necessary on one occasion to open the abdomen and complete the operation by that channel. I should say that, as a general proposition, any case of ectopic gestation in which there is no active bleeding, or in which no active bleeding has taken place very recently, may well be operated in by the vaginal route. In only one of the cases was the blood fresh, that being a case where the patient had the symptoms of internal hemorrhage, and a small vaginal incision was made for diagnostic purposes solely, without the faintest thought of completing the operation through the same incision.

OPERATED IN BEFORE THE SURGICAL CONGRESS. ECTOPIC GESTATION WITH ONLY SLIGHT HEMATOCELE.

Case II. Patient had a mass on the right side of the uterus about the size of a fist. The diagnosis of this mass, taken together with the history, was tuboovarian inflammation, probably cystic. When examined under anesthesia the mass seemed to be harder, and as the fingers applied over the abdomen pressed down in the steps of the examination, they passed between this mass and the uterus, and the separation of little tiny fine bands which yielded to this pressure was distinctly felt. (I consider this to speak decidedly in favor of an ectopic mass.) A possible diagnosis of dermoid was made, and the operation was done vaginally. Although there was little free blood and not many clots in the peritoneal cavity, the typical bluish shimmer was present as soon as the vesicouterine fold of peritoneum was reached, with the aid of the T shaped incision. Even then ectopic gestation was referred to rather in a doubtful way. On entering the peritoneal cavity a few little black clots were seen. The tube was taken hold of at the uterine end by a sponge holder, and as it was drawn out into the vagina, the outer end, with its enlarged ovary, forming a continuous mass, impinged against the anterior speculum, and it was impossible to bring the large tumor more distinctly into view. The appearance of the mass, therefore, showed it to be a tube filled with hard clotted blood. The dressing forceps perforated this outer end of the tube to permit some of the coagulated contents to be expelled and thus diminish the size of the mass. Clamps were applied to the edges of this perforation and they gradually brought the large ectopic mass into the vagina, when its removal was a matter of ease.

ECTOPIC GESTATION WITH HEMATOCELE.

Case III. Dora, aged twenty-two years, para I, three years ago. Two and a half years before admission, patient began to complain of cramplike attacks in right iliac region, occurring once in three or four months, lasting from two to three hours, more frequent and severe in the last year. Last one, three days before admission, was more marked than usual. Last menstruation a little more than four weeks before admission. Colostrum present, no masses felt in abdomen. Cervix small and soft. Uterus fundus indistinctly felt forward. In the right fornix a smaller and a larger tubular mass, very tender, the upper boundary of which was not felt distinctly. Patient very obese and abdomen held very rigid. Definite diagnosis made under anesthesia. Operation December 10th. Twelve days later temperature rose to 103° F. Vaginal examination showed a hard infiltration in the cul-de-sac of Douglas (hematocele). Mass gradually grew smaller, less tender temperature lower, became normal December 29th. Four days later temperature rose to 105° F., vaginal examination negative, no abdominal signs, temperature dropped to 100° F. and rose again to 104° F., malaria being looked for. Next day redness over the face gradually spread, and a well defined case of erysipelas was recognized.

In this case the plica showed a typical blue shimmer, which is so important a diagnostic step in ectopic gestation. Incision of the plica verified the diagnosis, as dark big clots and some dark fluid blood poured out. As much as possible was removed with sponges, the uterus was turned so that the right horn was in the median line, and the fingers of the right hand enucleated the enlarged tube from the hematocele. The tube was brought into view by an application of clamps to the uterine end of the tube and to the ovarian ligament, after which a clamp was applied to the ligamentum infundibulopelvicum. Then three ligatures were applied about this ligament. The tube was removed, but the ovary was left behind.

Case IV. Hinda, aged twenty-two years, para I., three and a half years ago. Menstruation expected November 18th. Two days following the expected date she was seized with sharp cramps in the lower part of the abdomen which lasted a day, and was followed by bleeding. Since then had had more or less pain all the time and had bled some. Two days before admission vomited for the first time, felt faint but did not faint. Patient did not look pale. No colostrum. Tenderness in right iliac fossa, cervix hard, large, fairly movable, uterus enlarged, slightly movable. A cystic mass was felt per vaginam about the size of a lemon, continuous with a similar mass which

filled the cul-de-sac of Douglas and extended to the left side. Sensation of a large hematocele surrounding a firm tube was clearly noted on examination under anesthesia before operation. White blood cells, 12,000, polynuclears, eighty per cent. Operated upon on December 10th. Posterior vaginal drain. Varying temperature for four weeks owing to the disagreeable nature of the discharge. Patient felt perfectly well, however; no sign of peritonitis.

As soon as the peritoneum was exposed there was a typical blue shimmer, which I had so far observed in every case of ectopic gestation operated through the vagina. On incising the peritoneum there was a flow of dark thick, clotted blood. After introduction of the anterior speculum, the tube was grasped near the right uterine horn by a pair of ovarian forceps, and by a succession of these and by manipulation of the fingers of the right hand, the tube, which was no larger than the thumb, was brought into the field, and three chromic catgut sutures were firmly applied about the ligamentum infundibulopelvicum. The first one which was applied served to pull more of the ligament into view and aided in the application of the other ligatures. The tube was then ligated along its mesosalpinx and the ovary was not disturbed. The hematocele was as large as a child's head, and posterior vaginal incision was made on completion of the operation for drainage.

VAGINAL HYSTERECTOMY.

A fair variety of vaginal operations, designed to enter the peritoneal cavity by the anterior vaginal route, may be readily carried out with the aid of a transverse incision made below the lower border of the bladder in the anterior fornix. This incision suffices, for instance, to expose the vesicouterine plica of peritoneum when looking for the blue shimmer so typical of the majority of cases of ectopic gestation, which shimmer was present in the three cases which I report. Through this transverse incision, especially in a multipara, the peritoneal cavity may be readily entered for exploration, and in many cases the transverse incision suffices to carry out the desired operation. In fact, it was made use of in one of the three cases of ectopic gestation which I report. A larger exposure is often essential. In many of the operations complete separation of the bladder is certainly desired. In performing vaginal hysterectomy I believe complete separation of the bladder should always be practised. In vaginal operations planned to correct cystocele or to correct a malposition of the uterus, this is an absolute essential, and for these reasons I use in practically all vaginal cases the inverted T shaped incision, which was the mode of approach in all the cases reported with one exception. It gives abundant room, enables us to hold the bladder out of the way, exposes the peritoneum so that it is cut through with the aid of sight, and allows that important landmark, the anterior wall of the uterus, to be readily seen at all times.

A uterus of even fairly good size may be readily delivered into the vagina. The shorter the uterus the more readily may it be delivered. The uterus with a long cervix furnishes some difficulty in delivery if retracted broad ligaments hold the uterus tightly in the region of the ureters and the uterine arteries. A fundus so large or so long that it cannot be delivered in its entirety may be brought out into the vagina by having its anterior wall slit up to any desired extent, and pieces may be removed from either side of this anterior cut, and in this way, with or without the removal of fibroids, the body of the uterus may be so diminished in size that it may be finally delivered into the vagina and completely split in halves. When dealing with a uterus associated with unilateral or bilateral tuboovarian masses with adhesions, it is a very difficult thing, after separating uterine adhesions and delivering the uterus, to have sufficient room or the right sort of approach necessary to successfully enucleate these annex tumors. Hence, it is a more simple procedure to split the uterus entirely in two and then, by pushing one half back into the pelvis and pulling the other half well out beyond the vagina, to pass the fingers along the posterior wall of the broad ligament and separate the tuboovarian tumors from their adhesions and deliver them into the vagina. If more room is desired, the uterine halves may be removed and then the annexa are attacked.

CLAMP METHOD.

Wherever haste is desired or wherever the uterus is very long and the broad ligaments are retracted, wherever the broad ligaments are infiltrated or brittle, and wherever, after morcellement, irregular areas of uterine tissue are left attached to the broad ligament. In those cases where the infundibulopelvic ligaments are short and in fact, whenever the application of sutures cannot be done simply, quickly, and with ease, clamps are of wonderful value. They are applied usually one on either side from below upward, thus taking care of the lateral walls of the cervix and lower part of the uterus, and including the uterine arteries; the others are applied from above downward with or without previous splitting of the uterus, one, two, or three being used on either side, as occasion demands. The clamps are allowed to hang down, out through the vagina in a horizontal direction. Each vaginal flap is later fixed to the upper part of the broad ligament, the opening in the vaginal wound is narrowed as much as possible by interrupted sutures, and then two or three strips of wide iodoform gauze are introduced into the peritoneal cavity, filling the space between the broad ligaments snugly and lifting the bladder up away from the cul-de-sac. This gauze is removed gradually, beginning with fifth or sixth day. I use this gauze practically in all cases, whether the suture method or the clamp method has been practised. In the suture cases each flap is fixed thoroughly around and to each broad ligament, it having been found that by these means the occurrence of a subsequent cystocele rarely takes place. Clamps are removed at the end of thirty-six or forty-eight hours without disturbing the patient from her bed or displacing the intraperitoneal or vaginal gauze.

If, in the performance of hysterectomy, the uterus is not split or divided in two, one side may be separated from the broad ligament with ligatures or clamps. This, then, brings the uterus well out beyond the vagina, and makes the ligation or clamping of the other side, or delivery of the annexa of the other side more simple, and gives a very much greater space for approach.

The application of clamps is rendered more easy by complete division of the uterus, for then each half of the uterus is drawn out beyond the vulva, the broad ligament is made tense, and the clamps are applied from above downward as a rule, in an almost vertical direction. Every area which is

clamped is distinctly visible, the intestines may be easily kept out of the way by gauze, and the bladder is protected by a narrow anterior speculum. It is frequently a measure of protection early in the operation to put one clamp on either side from below upward to grasp the uterine artery. If this is done, however, before the fundus is delivered, or before the uterus is divided in two, it may interfere with the ready delivery of the uterus, and by pressing against the vulva, perineum, and vagina, it diminishes the space through which we are working, and interferes with the ready handling of the uterus after it has been bisected.

After the peritoneum has been walled off with gauze, and after the vagina is packed with gauze applied in such a way as to surround the clamps and prevent them from pressing against the vaginal walls and the perineum, two wide strips of adhesive plaster are passed under the handles of the clamps and over each thigh, after the legs have been extended and brought close together. This supports the clamps and prevents them from pressing by their weight on the external genitalia.

The patients are catheterized every eight hours, a narrow metal catheter often being necessary.

CLAMP METHOD, VAGINAL HYSTERECTOMY WITH AMPUTATION OF UTERUS AT THE INTERNAL OS DURING OPERATION.

CASE V. Mrs. S. Continued menorrhagia for several years, due to several interstitial fibroids situated in the fundus of the uterus. Very little hope was held out of the probable favorable conclusion of any attempt to be satisfied with a conservative myomectomy. This possibility was, however, borne in mind. With the aid of an inverted T shaped incision, the bladder was separated from its contact with the cervix and uterus, and from its relation to the anterior vaginal wall; the longitudinal incision extending up to the urethral prominence. A posterior vaginal incision was made, and the cul-de-sac was entered, two clamps being applied to unite the peritoneum with the edge of the vaginal incision. An anterior speculum was then introduced, and the vesicouterine plica was incised widely. The anterior retractor was then introduced into the peritoneal cavity, and with the aid of successively applied volsella, the uterus was brought into the vagina. Before the uterus was delivered, however, two clamps had been applied to the lower part of the broad ligament. The application of these clamps made it difficult to bring the fundus down as far as is possible when the cervix is free of the clamps, so that there was little room anterior to the uterus. Two broad ligament clamps were applied on the left side, and with the aid of scissors, the uterus was separated almost to the level of the internal os. This area owing to the angulation of the cervix, produced by the first clamps that were applied from below, was a little removed from a clear view and, in addition, at this point a small fibroid was present, so that *a transverve incision was made at the level of the internal os completely separating or amputating the fundus from the cervix.* Then the right side was clamped and separated down to this transverse cut, leaving the cervix still within the grasp of the two clamps first applied. It was then easy to see that only a small area of tissue still needed to be separated, and the little fibroid on the left side was enucleated without any damage. The connecting bands of tissue were cut through and the cervix was removed. A few interrupted sutures diminished the size of the vaginal opening anteriorly and posteriorly. A chromic catgut suture fastened each flap to the upper border of the broad ligament of its corresponding side. Two wide strips of iodoform gauze were introduced into the peritoneum, and other strips in the vagina so as to protect the lateral wall from the pressure of the clamps, and the clamps were surrounded with gauze and supported by a strip of plaster. The clamps were removed at the end of forty-eight hours, the vaginal gauze in five days, the intraperitoneal strips a few inches each day, so that by the tenth day douches could be begun. The patient made a very safe recovery.

CLAMP METHOD, VAGINAL HYSTERECTOMY, INCLUDING LEFT SALPINGOOOPHORECTOMY FOR TUBOOVARIAN ABSCESS; BISECTION OF UTERUS.

CASE VI. Mrs. G., aged forty-four years, para IV. Last child twelve years before. One abortion ten years before. Marked menorrhagia for the last six months. For the last three months menorrhagia and metrorrhagia with weakness, pain in pelvis, loss of weight. Patient looked pale and poorly nourished. Uterus larger than normal. With the use of the T shaped incision the uterus was found adherent to the posterior pelvic wall and was pretty well surrounded by adhesions over the fundus. These were separated by finger and gauze blunt dissection. In the anterior wall of the uterus was a fibroid somewhat larger than a walnut. Uterus was divided in the median line without the loss of any blood. The right half of the uterus was pushed up into the peritoneal cavity and the first two fingers of the left hand were used to separate from adhesions and to enucleate the left annexa, consisting of a large tuboovarian mass surrounded by many adhesions. The mass was punctured to allow some of the contents (purulent) to escape. Clamps were applied on the left side to include this tuboovarian mass. On the right side only the uterus was removed, there being no marked change in the annexa. Operated upon November 26th, clamps removed, November 28th. Last gauze removed December 12th.

CLAMP METHOD, VAGINAL HYSTERECTOMY, MORCELLEMENT FOR MULTIPLE FIBROIDS, BISECTION OF UTERUS.

CASE VII. Mrs. C., fifty-five years of age, had been under my care for three years for pronounced menorrhagia associated with pain on the right side. Patient was extremely obese, and it was impossible to make out the exact contour of the uterus, but the sound showed it to be two and one half times the normal length. Bimanual examination showed on the right side, on a level with the cervical internal os, an intraligamentous fibroid the size of a tangerine: one nearly as large, just above the cul-de-sac of Douglas: another one anteriorly and one or two others higher up. Various measures used locally, together with internal medication, served at times to diminish the annoyances, but gradually the patient's bleedings became so marked that they would last in profuse amounts for two weeks, in spite of packings, hot douches, and internal medication. The patient was anxious to be relieved of her annoyance and the choice existed between a curettage and a hysterectomy. An abdominal hysterectomy was excluded by me because, with such an obese patient, the intraligamentous fibroid, particularly the fibroid in the cul-de-sac, would have made the latter part of this operation of complete hysterectomy extremely difficult and dangerous. The patient had a decided proctocele and the vault of the vagina was not very wide, nor could the cervix be drawn down far. Simple curettage, as subsequent operation showed, would have been of no value, and I elected to do the vaginal operation. Anteriorly an inverted T shaped incision was made. Separation of the bladder showed in the anterior wall a fibroid the size of a crabapple. A transverse incision was made posteriorly and the posterior vaginal wall was dissected away up to the cul-de-sac where the fibroid lay fixed between uterus and rectum, making it impossible to enter the peritoneal cavity at this point. It was this fibroid and the firmness of the ligamenta cardinalia, together with the intraligamentous fibroid of the right side which made it impossible to bring the uterus well down. The cervix was then grasped by two Jacobson forceps on either side and the cervix was split in two anteriorly and posteriorly, up to the respective fibroids. The bladder was held out of the way by an anterior speculum and the splitting was continued anteriorly, the inner border of the two halves of the cervix being likewise grasped by Jacobson forceps. With the blunt scissors and the finger, the anterior fibroid, having been first grasped by a volsellum was enucleated. It was impossible to bring more than a slight area of the anterior body of the uterus into the field of operation, because the fibroids, intramural and subperitoneal, made it too large and because they impinged upon the speculum. The splitting of the posterior wall of the cervix was continued and

a volsellum grasped the cul-de-sac fibroid. Then, with the aid of blunt dissection by the finger, that too was enucleated. Then the anterior wall was attacked, the splitting being continued up a little further, the two halves of the uterus being grasped, and successive fibroids were enucleated. The intraligamentous fibroid on the right side was so close to the situation of the ureter and uterine vessels, that it was attacked in the following manner:

A transverse cut was made through the anterior wall of the right half of the uterus from the median area close up to its outer border, and then the finger bored its way to the intraligamentous fibroid which was grasped with a volsellum. A blunt ended pair of scissors dissected this mass gradually from its surroundings; the more it was separated, the deeper was the area which was grasped, and the more clearly did it come into the field of operation. The index finger aided in this blunt separation and in this way the most deeply buried part of the circumference was finally brought into view, and every stage of the early and final steps of the enucleation had been accomplished practically with the aid of the eye. Then by morcellement the lateral walls of the uterus were resected, so that gradually the fundus came into view, and more fibroids were enucleated. The splitting was continued in this wise over the posterior wall until the cutting ended in the longitudinal slit that had been made in the posterior wall of the cervix. The peritoneum of the cul-de-sac was still intact, showing that the posterior fibroid had been retroperitoneal. Two broad ligament clamps had been applied to the lower area of the uterus along the cervix, and with the aid of scissors, the two halves of the cervix had been separated up to the area just above the uterine arteries. Two clamps were applied to the upper part of the broad ligament median to the ovary, and this part of the fundus was removed on either side. The middle area of the right half of the uterus through which the intraligamentous fibroid was removed had, attached to it, several clamps which had been applied while the morcellement of the uterus was taking place: These were left *in situ*. The same condition was encountered on the left side, where likewise in the median area several clamps and volsella had been applied. As much as possible of the uterine tissue along the lateral border was trimmed away. The peritoneal opening was packed with three strips of iodoform gauze; the vagina was packed with iodoform gauze. The clamps were removed at the end of thirty-six hours, without disturbing the patient. The vaginal gauze was removed at the end of five days and from then on the intraperitoneal packing was drawn out a few inches each day until it was all removed. Vaginal douches were then begun, which brought away for several days various sloughs of necrotic tissue, namely that portion of the lateral uterine wall embraced by the various clamps.

The patient made a smooth recovery with only slight symptoms of peritoneal irritation. One of the most annoying factors in the course of the operation was the very extensive protocele, which persisted in intruding itself into the field of operation beyond the end of the posterior speculum, and was a constant source of annoyance. The use of clamps precluded the possibility of doing a perineorrhaphy at the same time.

SUTURE METHOD, SIMPLE VAGINAL HYSTERECTOMY WITH THE AUTHOR'S METHOD OF PREVENTING THE SUBSEQUENT OCCURRENCE OF CYSTOCELE.

CASE VIII. Sarah S., aged thirty-eight years, para VI, last child six years before. A year before admission menstruation began to come on every two or three weeks, six to seven days in duration, profuse in amount, dull aching pain in the pelvis accompanying it. Frequent urination. Uterus moderately enlarged, ovaries more than twice the normal size, with the appearance of hypersecretion. Ligature method, uterus removed, tubes and ovaries left in place. Stumps of broad ligament were anchored to the corresponding vaginal flap of vaginal mucous membrane to prevent future cystocele. Operated upon December 17th, vaginal gauze removed December 27th. Pathologist reported fibrosis uteri. After the peritoneum had been entered anteriorly by the T shaped incision, and after the posterior fornix had been transversely incised to enter the cul-de-sac, the lateral walls of the cervix were exposed by pushing the vaginal mucosa upward, and two chromic ligatures were passed with the ligature carrier, one on either side, including the lower part of the broad ligament and the uterine arteries. The scissors cut between these two ligatures and the cervix until the uterine arteries were exposed when each was tied off separately. Then the fundus of the uterus was delivered and the broad ligament was ligated downward by three chronic ligatures applied median to the ovary, no attention being paid to the tube and ovary whatsoever unless diseased. The scissors then cut away the fundus from the broad ligaments down to the previously cut uterine arteries. The ligatures which thus included the entire broad ligament were then drawn out so that the broad ligament stumps were in the vagina. Gauze was packed between them to keep intestine and omentum out of the way and anterior retractor kept the bladder out of the way and then a *heavy chromic suture was passed which united the vaginal flap of either side, the vaginal mucosa which had been removed from the lateral wall of the cervix and part of the vaginal mucosa of the posterior fornix, to the entire broad ligament of that side,* the suture passing through the ligamentum ovarii of the upper part of the broad ligament, and the peritoneum of the posterior wall of the broad ligament, and the peritoneum of the cul-de-sac. When this was tied on either side, *each broad ligament was completely enveloped by vaginal mucosa, and the opening between the two sides had been narrowed.* This opening was further narrowed by interrupted sutures applied along the posterior margin of the incision, and then the peritoneal cavity was packed with gauze, removal of which was begun on the fifth or sixth day and completed on the tenth or twelfth. The vagina was likewise packed with gauze. For two days there was considerable serosanguineous oozing.

134 WEST EIGHTY-SEVENTH STREET.

AMERICAN ASSASSINS.

Their Prospective Prevention.

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The stalking murderer is a pest under whatever guise he appears. And whenever humanity is shocked by an attack on the life of one of its illustrious representatives, there is a loud cry for some method of prevention, cure, and relief.

How shall the need be met, the state psychically cleared? For a brief space the public ear is turned in our direction for any word of guidance. Medical men ought to know best how to meet this condition. The numerous sociological and educational societies can hardly approach the subject in as understanding a way or speak in as authoritative a manner. This matter can come up very naturally as one phase in the campaign of mental hygiene now under way in this country.

What with anarchists on the one hand and the insane and the criminal on the other, the path of life of our distinguished men appears increasingly beset with sudden dangers. It is not always possible to determine to which one or more of the three classes the offender belongs; hence for present purposes they can be considered together.

Although regicides elsewhere have long been known, the fact that the three assassinations of our Presidents have all occurred within the memory of many of us seems to show that in our country this species of infernalism is strictly modern. True, there is some account of an assault on at least one earlier President; moreover, the somewhat mys-

terious deaths of two others in times of great public stress aroused a profound suspicion, never entirely removed, that artificial agencies hastened their untimely end. But any such forerunners belonged to an earlier period and were different in character and certainty.

As, with the possible exception of the first case, no idea of conspiracy has been established, these acts are to be regarded as those of individuals. That fact, however, does not decide whether the criminal act is to be classed as social or alien in character. We may not forget that there are forms of social degeneracy, more or less hereditary, that do not as yet find a place in the recognized types of mental aberration.

But with the advance in methods of diagnosis there is a tendency amongst medical men to attribute a larger and larger proportion of crime and error to organic and mental defects as compared to purely social causes; and much painstaking study has been given to the cases in hand by able men to make out that each was insane. At most it is a *post hoc* conclusion. We can safely say, however, without any study, that such persons must have been mentally unbalanced at the time of their acts.

It is commonly thought that these isolated assassins and their deeds are of only individual significance; that the main thing is to determine whether there are bands or congeries of allies giving support or encouragement. On the legal or police side this may be a warrantable attitude, but from the medical standpoint the relative importance is exactly the reverse. For any person may, under the exciting influence of combination, convention, or conspiracy, do things quite beyond his ordinary inclination; in which case the misdeed by itself has less medical significance. The independent assassin, on the contrary, often represents the crest of a morbid wave including many others in the community. It is clear that, excluding conspiracies, there must be many near assassins for each one that makes the attempt. And where this exemplification recurs, as has happened here these several times in the last fifty years, we can be sure the animus in greater or less degree is widespread. And this holds whether the act is that of an insane person or otherwise.

It is known that one such attack tends to suggest and develop others. Doubtless the assassination of McKinley, the attack on Gaynor, and the murder of Rosenthal were the psychic suggestors of the latest crime; while the original one on Lincoln was in form the spectacular act of a theatrical man. The murder of the governor of Kentucky, though equally criminal, was not quite the same in method, and had some of the elements of feud.

Apparently these single culprits came from the eastern older and more densely settled portions of the country. While this may in part have been due to their greater opportunities for mischief, we may conclude that the larger centres, the crowding of population, and what may be termed the European as contrasted with the western spirit, favor the development of this class.

If shooting is the only means practicable for the solitary adventurer, the immediate warding off of such outbreaks is a problem for the police and personal guards. But, whether so or not, as it is everywhere evident that this form of protection fails of its purpose, it is time to consider what else can be done in the way of prevention.

Not many of the plans for relief call for notice. But among the proposed remedies is one that has attracted some attention. This is the proposal to establish "a clearing house for the examination of mentally defective persons," the institution to begin its work evidently with the young. From mere newspaper outlines it is impossible to judge fully. But, as it should prove useful in various ways, as it is backed by some of the better interests of the city, and as it is strongly advocated by three of our recognized alienists, it is entitled to our hearty approval for whatever of value it may possess.

To make such a plan effective for present purposes, however, it will be necessary to have the mental condition determined by some method of far greater weight here than that of scholastic averages. The Binet or similar system merely gives an intellectual grading, and has no further medical value. In fact, some of the most dangerous individuals, from a criminal point, are onesided, i. e., are so constituted with fair abilities in many directions as to give a passable intellectual rating.

The all around stupid is far less dangerous. We must, consequently, not be caught by any such fallacy as supposing that a simply intellectual "clearing house" is going to ferret out the prospective candidates for these forms of criminality. A careful medical examination on widely different grounds can alone be useful.

It must also be remembered that as yet we cannot by even medical knowledge always be sure of spotting every one of the incipient candidates for lives of error. *At best* it will be like our systems of water filtration, a means for eliding a larger or smaller percentage of harm bearing organisms.

The educated criminal bands in England, euphoniously calling themselves militant suffragists, illustrate the absolute folly of presuming that any intellectual or ordinary system of examination can invariably detect the taint of future "cussedness." And the villainous conspiracies in police and union circles emphasize this to the maximum, so far as concerns the element of combination in these offences, or even the possibility of leading persons of ability into transgression.

The "clearing house" scheme is calculated to catch the congenital and early developing forms, i. e., practically the hereditary and those only. Possibly for the long run and from the racial point of view this is the line of chief importance—though far from it as a matter of immediate practice. It is the same question, in slightly different guise, about which our biological scientists are divided into two groups, hereditarians and environmentalists.

Some of those in charge of institutions, from the combined influence of their mass of hopeless cases and of the modern teachings in heredity, are reaching views analogous to the old doctrines of fatalism, determinism, or predestination. And the next sequence is therapeutic nihilism.

The practitioner should obviously not devote him-

self exclusively to any side, but be able to recognize either type of etiology as predominant in a concrete case or in certain forms.

It may also be recalled that while modern studies of heredity make out a clear case against feeblemindedness and idiopathic epilepsy as constituting a distinct hereditary defect, when it comes to insanity little definite has so far been established. Logically this suggests that heredity constitutes no such large part of the etiology of insanity as in the other case. It harmonizes with the fact that while the former always appear in infancy or youth, insanity does not usually become decisive until later, i. e., until external influences have had time to play a part. The case against heredity from drunkenness is still less certain, as cases are common where persons of superior ability arise from inebriate stock, not excluding periodics.

The purport of these facts in heredity is that we cannot expect to prevent the occurrence of numerous cases of insanity by the exclusion of bad heredity alone; and there is still less chance that the incidence of assassins can be thus entirely controlled.

The conclusion of such a reactionary as the late Dr. A. Lapthorn Smith should be valid even to hereditarians. He says in The Explosion of the Theory of Heredity, New York Medical Journal, September 19, 1908: "If more attention were paid to training and environment, . . . there would be . . . fewer insane, fewer drunkards, and fewer murderers."

This method can consequently prove but a very slow and partial preventive, and not a timely detector of the insidiously developing crank. We need this plan, and we need more.

And let us not fail to put a fair share of the blame for this condition where it belongs: in the first instance with our legal tribunals, and then with the false sentiment and obliquity of the public. We see cases of the most dangerous sort discharged by the courts; and, knowing of this judicial practice, institutions send others of the kind away, lest they be bothered with both court proceedings and public disfavor. The gifted sufferer from the recent attack might now add a very personal grievance to his criticised criticisms of the courts!

So long as courts, with or without juries, continue to set the criminal insane free (except on the request and advice of the medical authorities entrusted with their care[1]) so long as they proceed likewise in the case of all other institutions for the insane, and so long as these powers hold their opinions superior to those of accredited psychiatrists in questions of mentality, just so long should a due proportion of blame in any such matter be placed at their door.

Another and related piece of legal retardation is their old dictum or rule for determining insanity. In reality, there is no one of these malcontents, with their well laid plans and carefully carried out villainies, but knows perfectly well the nature purposes and consequences of his acts. The trouble is rather a lessened ability to resist bad impulses. In that case the question is, How can we best jack up his wavering inhibition? He differs from the ordinary malefactor only, if at all, in the object he seeks. If punishment is ever a deterrent of crime, it may be as much so in the case of these individuals as in that of the common malefactor. If either of these figures on the consequences to himself, the ordinary evil doer thinks of how he can avoid being caught, and the assassin trusts to being called insane or becoming the recipient of misplaced sentiment.

There is also much to commend in the proposal that committers of crime, when relieved of punishment on the basis of insanity, should be permanently held in restraint. If an individual's mentality or normal control has once so far given way as to permit a criminal act, there is a large chance of recurrence and the person is a menace ever after. This method should not involve harsh treatment, but such definite segregation as to constitute a warrantable protection to public and patient, and a merciful substitute for punishment. The craze for pardoning influential convicts that has lately broken out in high places, serves to emphasize the need for revision of procedure.

Here in Brooklyn we are distinctly worse off than elsewhere in controlling examples of this class who are eligible for mental care. As every one knows who has to do with commitments of the insane, the more slily dangerous the individual the more difficult is it to effect his legal control. Formerly all our judges were open to make commitments. But of late years they have arranged among themselves a rule whereby all this work is put in the hands of the two county judges; and of these but one sits for this purpose at a time and for the briefest period daily. So far this might perhaps be passed as inconvenient detail merely. But the committing judges, just among themselves and only here in Brooklyn, have gone further and laid down the rule that they will not waive personal service—a privilege which the law specifically provides in suitable cases. This is far more arbitrary than legislative enactment; for the latter is at least reviewable by the courts, while the aforesaid rule is the most absolutely unattackable arrangement that can well be imagined.

The reason which these judges are said to have assigned for their action, was to save them from risk of financial suits. It may be suggested that it is time we changed judges; even this has occurred and without relief. Just across the river, in Manhattan or elsewhere in the State, though under exactly the same laws, no such arbitrary limitation is attempted.

It is clear that the inevitable tendency of all this is to handicap the commitment chiefly of dangerous persons.

And here may be mentioned a strange step backward in the law of this State, whereby suicidal attempts are placed in the criminal category. Excluding purposive fakes, such acts are of themselves *prima facie* evidence of mental aberration. The right method with such sufferers is to have them committed for examination as to their mental state.

There are other things of far greater importance in the long run than *repressive measures*, which might be taken up more systematically by the profession than has so far been done. For no nation or people achieves its best if policing (in the wide

[1]Compare Lamb: The Commitment and Discharge of the Insane Criminal, *State Hospitals Bulletin II*, p. 394, 1909, as to the sad sequels of a series of such cases.

sense) requires such large relative and absolute expenditures as is now the case with us. You can asexualize and segregate and punish and condemn as you will, and not get far in the way of remedy, no matter how necessary for the time being these makeshifts may be.

But the racial instinct, the nervous stamina, the *morale,* the inner strength or sanity, or whatever it be that needs no threat of law, how is this to be fortified and its impetus preempted for the right? The answer may require a review of all the activities of life. At least two further general lines may be mentioned in which we can be useful: One refers to education, training, and information to develop or keep the individual in sense and sanity; the other is to point out ways more immediately to prevent impulse and forestall opportunity.

A couple of illustrations must suffice: On every street are those who, while perhaps recoiling when the crime is done, nevertheless have in advance a strong shadow of a wish that evil might come to the individual. That this is not entirely a matter of the subconscious is shown by the gloating joy experienced by many when they hear of something against the really or reputably good. Most of us have sometimes transgressed. Phases of this, like the one popularized as "muck raking" may even have quite a vogue.

Anarchistic teachings and tolerance for anarchical propagations are rife; and if these are the most stimulant mental pap thrown continually at the youthful and still impressionable, the natural aftermath is to be expected. Not all anarchists and nihilists are effete, or they would not succeed in making as much stir as they do. If our school textbooks can devote pages to the effects of alcohol, they might certainly give some emphatic teaching on such universal requisites as consideration for others, control of passion, and the inviolability of human life.

A child is naturally an egoist. It is wholly concerned with itself, its own things, and own interests. In the earlier years it has no thought of others. It also wants to figure as "the whole show." Appreciation, especially when lavished on the male of the human or other domestic species, feeds its vanity. Few things are more likely to accelerate this vain egotistical paranoid bent than the elaborate dressy graduating exercises of every school at the present day. And worst of all, this is an influence exerted on the young. These graduating pageants appear to have originally been advertising schemes for secular institutions. So long as they were confined to colleges they may have been of limited moment. That they are not vital parts of an educational system is shown by those countries or sections where the like are not seen and yet where the highest grade of intellectual development is achieved. And it may be more than a coincidence that of recent years there appear to have been fewer attempts on the life of the ruler of one such country than on those of other lands.

Another and timely illustration pertains to the lionizing custom. Our highest officials should not be expected to make a continual exhibit of themselves, "speechifying," traipsing up and down the country, opening balls, etc. And the like applies to much of the political campaigning as now conducted; from the general point of view an expensive, inadequate, and vicious way of accomplishing results. A slight improvement has been made in the way of less handshaking by the President, and the former expectation of every idiot on reaching Washington that the President would be on the corner to welcome him has been a little modified. But that the folly still persists is shown by the disgraceful conduct of our shallow citizens who continually seek presentation at courts abroad!

Infections have taught us that in such matters there is a mutual dependence between all classes of humanity. We can now see that in the present field of discussion there is a not less intimate relationship.

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THE NEEDS OF THE EYE, EAR, NOSE, AND THROAT SURGEON IN GENERAL HOSPITALS.*

By Frank Allport, M. D.,
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All eye, ear, nose, and throat specialists are well aware of the difficulties to be encountered in endeavoring to do their work in general hospitals.[1] We visit such institutions as the New York Eye and Ear Infirmary, the Massachusetts Eye and Ear Infirmary, etc., and we envy those surgeons who seem so easily to dispose of their work. In these institutions we find a permanent operating room, nurses and internes who serve long terms and who become familiar with their duties. We find good instruments, solutions, lights, wards, etc., all arranged for the convenience of the surgeons and for the benefit of the patients. The surgeon is thus enabled to give his entire time and attention to his work, his operations, and his service, which results in a quiet, undistracted mind, better scientific thought, and a higher percentage of good results. The work proceeds easily and comfortably, accompanied with only a minimium amount of confusion and irritation, and with all equipments and apparatus for ordinary and extraordinary occasions. To work in such institutions is a privilege and a pleasure, and it is an incontestible fact that whatever may be the cause, whether it resides in the men themselves, or in their atmosphere and surroundings, or whether it is the combined influence of both, men who work in such institutions, as a rule, stand at the head of their profession and become recognized leaders and teachers.

In sharp contrast with these almost ideal working conditions, let us picture the difficulties encountered by the eye and ear surgeon in endeavoring to perform his duties amid the bewildering surroundings of a general hospital. It is not too much to say that he works in an alien atmosphere from beginning to end, in which he is constantly compelled to fight for his own rights and for the rights

*Read before the Chicago Laryngological and Otological Society, January 21, 1913.

[1]For purposes of convenience in writing, such specialists will, hereafter in this article, be usually designated as oculists and aurists or surgeons, although I include under the one title men who do all kinds of eye, ear, nose, and throat work.

of his patients. Everybody is interested in surgery, in general medicine, in obstetrics, etc., but hardly anybody is interested in ophthalmology and otology. This is true of the superintendent, of the head nurse, of the internes, and of the operating room and other nurses. A general hospital interne who takes any particular interest in ophthalmology and otology, and who intends to make this his life work, is a species of interne that seldom I see. The consequence is that this service is an undesired one, and barren of interest to the interne, who therefore gets through with it as quickly and easily as possible. Such unwilling and perfunctory assistance is entirely unsatisfactory to the surgeon, who learns to depend less and less upon it, until, through force of circumstances, he pays but little attention to the interne, and learns to do practically all his important work himself; or, if he has an assistant in his office, he avails himself of this assistance, not only in his office work, but in his hospital work as well. The assistant accompanies him in his hospital rounds, makes independent calls, dresses patients, assists at operations, etc., and in fact almost usurps the function of the interne, an improper situation which has been largely and gradually evolved by the conduct of the average hospital interne himself. Such conditions occasionally precipitate unfavorable criticism from the medical staff and from the internes themselves; the former feeling that proper discipline is not being maintained, and the latter feeling that they are being ignored and their places supplanted by interfering usurpers. The surgeon is sometimes called upon to defend himself under such conditions, and he is reminded that hospitals are training schools for doctors, and that the internes are giving their services to the hospital in exchange for experience, and that therefore it is their right to receive from each attending medical man all the instruction that the material affords. Such protests are not frequent, however, for, as a rule, the average interne is only too glad to shirk the eye and ear service; still such protests do occasionally occur, and when they occur a defense is necessary.

I have already given some reasons why the services of the average hospital interne are unsatisfactory to the eye and ear surgeon, but, in addition, I desire to say that our specialty is quite unlike any other and requires special training, experience, adaptability, and delicacy of touch and manipulation. I have seen eyes ruined after operation by willing but untrained and clumsy internes, and a few experiences of this kind are not conducive to the fostering of ideas concerning the desirability of training green and transient internes at the expense of human eyes. An interne may be quite capable of dressing ordinary wounds and of doing ordinary hospital, surgical, and medical service, and yet be quite incapable of dressing eyes after cataract or other operations, or of dropping medicine into the eye without inflicting pain and injury, or of dressing a head after a radical mastoid operation, without defeating the purpose of the operation. Oculists and aurists, therefore, frequently form the habit of devising methods by which they can, at least measurably, dispense with the services of the interne, either by doing the work themselves, or by deputizing it to their office assistants. Even when (as occasionally happens) an interne appears who seems to take a real interest in this department, the surgeon's general line of conduct has become so well defined that it hardly seems worth while to change it for the brief space of one interne's service in this particular department.

And this brings us to a consideration of the great undesirability of short interne services in general hospitals. It is a fact that no intelligent surgeon will dispute, that the usual short term of interne service in a given department is not conducive to good work and is irritating and unsatisfactory to all concerned, for no sooner does an interne begin to wear off the newness and become really useful, when he is transferred to another department and a new man presents himself to be initiated into the mysteries. This difficulty is overcome in some hospitals by allowing internes to serve only in a limited number of departments during their months of duty. This plan seems to be quite satisfactory where it has been tried, but I believe that some better method will be devised by those who are giving special thought to the subject. Certain it is, that until eye and ear surgeons can command the services of internes for many months of continuous service, these young doctors, however willing and earnest they may be, cannot be of any great use to this department. At the present time, and under existing conditions, hospital superintendents, internes, superintendents of nurses, and nurses seem to think that the main object of hospital work is to educate internes and nurses. My own opinion as to the use of hospitals is, that they exist for the purpose of benefiting the sick, and for the convenience of physicians, and *incidentally* for the education of internes and nurses.

And this leads naturally to the subject as to how the eye and ear department in a general hospital can best utilize the services of the general hospital nurse. When it comes to being of any real assistance to the surgeon in his hospital work, the general hospital nurse is nearly a hopeless problem. This is not an ill natured criticism, it is simply a statement of an unfortunate fact; neither is it a reflection upon the nurse, nor her intelligence nor willingness, as this statement is possible only because of circumstances and conditions over which the nurse has no control, viz., the constant changing of her place and occupation from ward to ward and from service to service. Between educating new nurses and new internes, and patiently enduring their mistakes and shortcomings, the path of the attending oculist and aurist in a general hospital is certainly not strewn with roses. I wish again to emphasize the fact that I am not blaming these young people, indeed, I am not blaming anybody—I am simply endeavoring to present my subject truthfully, for the purpose of ultimately producing better conditions.

The oculist and aurist in a general hospital has his patients scattered from ward to ward and from room to room. As he progresses from place to place he is constantly confronted with a new nurse and with new conditions. If an interne goes with him, he may carry a tray of drugs, instruments, appliances, etc., for whose reliability as to cleanli-

ness, aseptic qualities, etc., no one can vouch, as it is no one's duty in particular to guard the dependability of these articles. He is, therefore, constantly in fear of using impure solutions, dirty droppers, infected ointments, etc. Sometimes each ward or room contains the particular articles he intends to use on the patients in that particular locality; but here again he is confronted with the same fear of contamination that is in evidence when he is using solutions, etc., from a migrating tray whose reliability is more than doubtful, and he is almost certain to want something, such as a solution, a light, a probe, an ophthalmoscope, etc., that is not at hand and that takes much time and confusion to secure. And so he proceeds from one portion of the hospital to the other, changing nurses from place to place, encountering fresh obstacles and annoyances as he continues in his calls, dressings, etc., until he emerges from the hospital tired and dissatisfied with his work and the conditions under which he is obliged to prosecute his labors. Beside this, the proper fulfilment of the surgeon's orders in the interim between his visits, in a general hospital, is a practical impossibility. The ever changing ward nurse is quite incompetent to instill drops into the eye, or to irrigate an eye, or to put ointment into the eye, or to change bandages, or to irrigate or dress an ear, etc. And as these things cannot be done properly during the surgeon's absence, he either dispenses with such necessary attentions altogether, or has them performed as infrequently as possible, in order to guard against damage occasioned by an inexperienced and therefore incompetent, not to say dangerous nurse.

The operating room conditions for the oculist and aurist in the general hospital are thoroughly unsatisfactory. The head operating room nurse is by no means a fixture in most hospitals, and her time is usually absorbed in laparotomies, amputations, etc., so that when the general ear surgeon desires to operate, one of the assistant nurses is usually assigned to him. There are several of these endeavoring to obtain operating room experience, so that it may easily happen that the surgeon may be assisted by an ever changing new nurse in his operations from day to day. He is thus irritated and annoyed, and therefore more or less incapacitated from doing his best work, by being constantly obliged to coach the nurse in her duties, and by using poor knives, scissors, sutures, etc., that are out of order owing to the lack of proper inspection. In fact, the general hospital operating room nurse has no conception of the necessities of instruments for the proper performance of ophthalmic surgery. Her ideas of surgical instruments are based upon those required to do large surgical work, and the necessities of a cataract or iridectomy knife or a pair of de Wecker scissors or a proper needle are apparently beyond her conception. She drops cataract knives into a tray, with perfect unconcern, and allows them to collide with the sides of the tray, without any conception of the delicacy of the knife, or with the fact that it should not be used at all if its point is not perfectly true. Nor does it do any good to instruct her, for she may be gone from her operative experiences to-morrow, and a new face, with all of its discouraging possibilities, may confront the surgeon. These are some of the difficulties that constantly confront the oculist and aurist who endeavors to do his work in a general hospital. I have not completely covered the ground by any means, but I have perhaps said enough to afford an insight into the subject. Again I wish to disclaim any intention of criticism upon hospitals, internes, or nurses, who are merely the natural products of misconceptions.

Eye and ear work was the first to become isolated and still is the most clearly defined of all the specialties. Almost all general physicians and surgeons refuse to do any appreciable amount of eye and ear work. They frankly admit their ignorance, and do not care to overcome it. This idea prevails amongst internes and nurses, who consequently take but little interest in this clearly defined and isolated specialty, which is therefore neglected as much as possible during their hospital service.

Having thus, at least to some degree, called attention to certain unfortunate conditions interfering with desirable eye, ear, nose, and throat work in general hospitals, let us endeavor to see if something cannot be done to remedy such conditions.

Concerning the interne situation, I have the following plan to suggest: What is needed is a long service of perhaps one year. It would not be possible dictatorially to appoint staff men to a year's service of this nature, without first gaining their consent; but if it was known that a certain hospital had a large eye, ear, nose, and throat service, to which men desiring such work could be assigned for a year or more, I am inclined to believe that the position would be kept constantly filled. It should probably best be understood that while such internes would consider their eye, ear, nose, and throat service to be of primary importance, yet they would be expected to work in other departments if their time was not fully occupied. This would probably be an additional incentive to secure the position, for most young doctors are anxious to round out their education and to secure as much general knowledge and experience as possible. Eye, ear, nose, and throat hospitals are comparatively few in number, and there are many young men desirous of special hospital training who are unable to secure an interneship in such special hospitals and who would eagerly grasp at a prolonged special service in a high grade general hospital. Such hospitals could, if thought desirable, issue a special certificate to those men who have served a year or longer in this department. I believe this plan is feasible and practicable, and could be successfully carried out in hospitals having a sufficiently large service to be a temptation to the embryo specialist.

This plan as just depicted is now being carried out in St. Luke's Hospital in this city. Some time ago Mr. Curtis, the superintendent, told us that if we desired it and he could find a suitable man, we could have our own exclusive and continuous interne. Some pessimists believed a man could not be found who would be willing to give up a year's time to what eye, ear, nose, and throat experience he could secure in a general hospital, but with remarkable promptness Mr. Curtis had about fifty applicants for the position, from whom he selected a man who is now the special eye, ear, nose, and

throat interne of St. Luke's Hospital. He will always have one or two junior internes working under him, who will change their service once in two months. The chief interne will have complete charge of the indoor and outdoor eye, ear, nose, and throat service of the hospital, and at the end of his year's service he will receive a proper certificate. He will be present at all operations, and will himself do all the operating it is possible to intrust to his hands. It should be clearly understood that this interne is the eye, ear, nose, and throat interne for the entire service, and that his services are just as much at the disposal of specialists that are not on the staff as they are for staff members. There is no salary connected with the position, but the interne is supplied with his living expenses. He is at liberty to do all the pathological work in the laboratory he desires, and we hope soon to have a special paid eye, ear, nose, and throat pathologist at St. Luke's, as we all recognize that the average general pathologist is not qualified to perform satisfactory pathological work in our department.

Concerning the nurse situation, I believe we have at St. Luke's Hospital gone a long distance in solving this vexed problem. Some years ago, recognizing the necessity for better service, we secured, through the cordial cooperation of the superintendent, Mr. Curtis, and the head of the training school, a nurse who was assigned especially to our department. She was an undergraduate, and her term of service was for three months. Her first duty was to us and to our patients, but if her time was not fully occupied she could be assigned to other work. She kept the eye and ear trays stocked with fresh dependable solutions, ointments, droppers, instruments, pads, bandages, cotton, etc., and always made the round of calls with the surgeons. She dressed and treated the patients between visits, kept the operating room instruments in order, and was always present at operations to be of all possible assistance, although she did not supplant the function of the operating room nurse. Just before her term of service expired, another nurse was appointed to take her place, and for several days she instructed the new nurse in her duties, so that the break in service would be as little apparent to the surgeon and patient as possible. In this way, it will be observed, four special nurses were educated in a year, and these nurses have been most valuable to the staff, who always request the employment of these nurses, in case private nurses are desired in eye, ear, nose, and throat cases. This plan worked very well for some years, but the need of continued service was constantly apparent to all concerned. Just as the nurse became of real service and dependability, she would be exchanged for a new one, and then the educational process would begin all over again. The superintendent then still further improved our department, and enhanced the possibility of superior work by giving us an experienced graduate nurse to stay permanently on our service. She receives a regular salary, lives at the hospital, is an officer of the institution, and has immeasurably lightened our burden and relieved our responsibilities. She has four assistant undergraduate nurses a year, who are assigned to her service, and who are instructed by her. This is done for the purpose of relieving the special nurse of certain routine work, and also for the purpose of continuing the process of educating nurses concerning the duties of eye, ear, nose, and throat nursing.

The possession of our special interne and special nurse has led us to hope for still better things in the future. We hope and believe that if our present conditions work harmoniously and successfully, and if our earnestness and usefulness to the hospital are further demonstrated, that within a short time a floor of the hospital will be devoted to our service, where we shall have a superintendent, with nurses, sufficient internes, with a chief interne in charge, wards, rooms, operating rooms, dressing rooms, etc.—in short, a hospital within a hospital, where the cares of management will be lifted from our shoulders, and where the advantages of a special hospital will be at our disposal.

One of the most useful steps for the upbuilding of a successful eye, ear, nose, and throat service, in a general hospital, is the establishment of a regular day and hour for an operating clinic, where operations shall be performed, and where doctors and medical students shall be welcomed. If there is sufficient material, two or more operating days should be established, and these days should be filled with unfailing regularity and should be as interesting as possible. At St. Luke's we now have two such days. On Thursday afternoon for many years all kinds of eye, ear, nose, and throat operations have been performed, and recently Tuesday afternoon has been set aside for all kinds of nose and throat work. Before long it is believed that more days will have to be added, and we hope that soon continuous operative work in our department will be performed every day in the week. The necessity for filling up these operative days is a great inspiration in the search for proper operative material. Besides, it magnified the importance of the department, keeps the beds filled, keeps the special interne and nurse busy, and undeniably maintains and improves the technic and experience of the operator.

Every hospital supporting a live eye, ear, nose, and throat department should possess an active dispensary for the treatment of these diseases, which should be under the charge of the eye, ear, nose, and throat surgeons of the staff, aided by the chief eye, ear, nose, and throat interne and his interne assistants. Such a dispensary is desirable, not only because it affords experience in refraction and other general work in these specialties, but because it must surely become a most important source of supply to the regular operative clinic. Outside of special hospitals or infirmaries, where the daily attendance of patients is abundant, it is not an easy matter to keep one, two, or three operative clinics a week well supplied with material. Every effort should be made to bring this about, and of the several available methods a good live dispensary is one of the best.

This paper has been written with the purpose of suggesting how the eye, ear, nose, and throat work in general hospitals can be improved and made better and more convenient and useful for all parties concerned.

I have explained to you what we have done and

are trying to do at St. Luke's Hospital in this city, but I do not wish to be understood as claiming a perfect service at this institution, as much remains to be done. But of one thing I am sure, viz., that the service in our department, under the present conditions, is infinitely superior to what it once was, and that the ideas carried out in this hospital might with great benefit be put in force in all general hospitals.

7 West Madison Street.

CONTRAINDICATIONS TO CURETTING.*

A Clinical Study.

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This paper is intended for the general practitioner, and throughout, his needs, his difficulties, and his viewpoint have been kept in mind. Although my own experience has been obtained in hospital, dispensary, and private practice. I have tried in what follows to adopt the point of view of the physician, who sees gynecological and obstetrical cases only in the course of his general practice, and to outline what appears to me the sanest and safest mode of procedure.

For this reason, I have used as a basis for my paper mainly 2,000 consecutive cases taken from my dispensary records, in which careful note was made of the number of curettings, and the reason for which this interference was practised. These patients were all ambulatory, although some were very ill, and, needless to say, included only the poorer classes from crowded sections of the city, whose surroundings and economic conditions were of the most unfavorable character.

In order further to limit the scope of this paper, I have purposely refrained from touching upon purely technical faults, and purpose throughout to avoid all reference to operative errors or accidents.

The topics I intend to dwell upon fall under the following headings:

1. Abortion—induced and spontaneous.
2. Postabortive hemorrhages.
3. Post partum conditions.
4. Ectopic gestation.
5. Inflammatory conditions of the parametria and annexa.
6. So called "endometritis," including leucorrhea.
7. Sterility.
8. Menorrhagia and metrorrhagia.

My statistics show that of 2,000 patients, and let me add that of these some were under the age of puberty and others unmarried, *more than one patient out of every five* had been curetted at some time!

Total number of cases	2,210
No record of abortions or curettages	210
Number of cases with records	2,000
Number of cases curetted	458 or 22.5%
Number of cases of abortion	721 or 36%
Of 721 cases of abortion the number of cases curetted	330 or 45.7%
Of 721 cases of abortion the number of cases not curetted	391 or 54.3%
Of 473 cases with one abortion curetted	200 or 42%
Of 473 cases with one abortion not curetted	273
Of 166 cases with two abortions curetted	76 or 46%
Of 166 cases with two abortions not curetted	90
Of 82 cases with three or more abortions curetted	54 or 66%
Of 82 cases with three or more abortions not curetted	28
Of 1279 cases who had never aborted curetted	128 or 11%
Of 1279 cases who had never aborted not curetted	1,151
Of these, curetted post partum	20
Of these, curetted for sterility	32
Of these, curetted for menorrhagia or metrorrhagia	36
Of these, curetted for leucorrhea, etc	40

1. *Post abortum.* The records show that nearly every second patient was curetted. In this group are included patients whose pregnancy terminated before the end of the fifth month of gestation. Induced and spontaneous abortion require separate discussion, but as the *patient's statements as obtained in the dispensary are rarely to be trusted,* no attempt at numerical subdivision was made.

(a) *Induced,* especially infected induced cases, form a group by themselves. If the physician, called in to see a case of this character, is alert and elicits the true history, he will do wisely at once to send such cases into a hospital. This protects the doctor from unjust criticism, and may save him from serious legal complications, if, as not infrequently happens, unexpected and fatal symptoms of sepsis develop. At the onset the course may seem mild, but the signs of infection sometimes develop late. In one case in which I emptied the uterus in the hospital on the tenth day, when the patient was ready to go home, tetanus developed and she died. The abortionist, who later was apprehended, was in the habit of using unsterilized instruments. Everything in this case pointed to a mild course and favorable outcome.

As a routine measure it has been customary, after careful dilatation, to empty such infected uteri with some placental instrument and a lightly used blunt curette. Even with skill and care, in a certain number of these patients bacteriemia develops and they succumb.

Lately, Winter, of Königsberg (1), a man of long and varied experience, has suggested that in those cases in which streptococci can be isolated from the uterus, noninterference should be observed until the uterine culture becomes negative—usually a period of several days to a week. His suggestion has raised a veritable storm of discussion in Germany, and has divided the German gynecologists into two armed camps, between which innumerable statistical bombs are still being hurled through the medium of the professional press. Personally I incline toward Winter's standpoint in infected cases, not so much because of the bacteriological findings, but because I have so often seen harm result from active interference, and, much more rarely, noted damage which could not be repaired, follow a Fabian policy. Doctor Pollack, of Brooklyn (2), has shown the courage of his convictions by putting them into practice. In the last fifty cases of puerperal sepsis, which include both postabortive and post partum conditions, he has refrained from all local intervention, and so far his results show a marked improvement over previous series.

Needless to say bacteriological tests almost always imply hospital surroundings. If the general practitioner will or must treat induced abortions at the patient's home, let him confine his activities to a *single* careful dilatation, and if possible a manual removal of all débris from the interior of the uterus. At the very most a curette should be *lightly*

*Read before the Harlem Medical Association, February 5, 1913.

and *sparingly* used. In the long run he will save more patients by noninterference than by even the lightest curetting.

(b) *Spontaneous abortion.* In a greater number of cases abortion sets in spontaneously. These cases aside from the history, are usually easy to distinguish by the fact that the patients may bleed for days without any marked rise of temperature, *if not interfered with.* These are the common class of cases, to which the general practitioner is called at some unearthly hour, because of bleeding. If he is inexperienced he will be alarmed by the profuse hemorrhage, examine hurriedly with septic fingers, pack the uterus or vagina in haste, and convert a clean case into an infected one. No such hurry is indicated. Up to the fifth month women almost never lose a fatal or even harmful amount of blood within twelve hours. After the fifth month profuse hemorrhage is most often due to placenta prævia or premature detachment of the placenta. But abortion after the fifth month almost invariably takes the form of normal labor in miniature, *and requires no interference,* or only such measures as apply to labor at term.

If part or all of the products of conception have been expelled before the physician's arrival, hasty interference is even less indicated. A thoughtful patient will preserve the clots and débris which have been extruded, and careful examination of their character and amount will often show that the uterus is completely empty. Here familiarity with the gross appearance and size of the fetal products at the various months of development, is of invaluable assistance. Unfortunately our medical schools do not supply this knowledge, which, therefore, has to be gained by practical experience and observation. If the material has not been kept, bimanual examination will show with a fair degree of accuracy, from the size and consistence of the uterus, whether that viscus is empty or not. Should the hemorrhage prove too profuse and persistent, in spite of palliative measures, the uterine cavity may be aseptically packed with iodoform gauze, left *in situ* for twelve hours, and then emptied at leisure and with due regard for asepsis. Curetting, however, can then usually be dispensed with, as the chorion is expelled with the gauze. Personally, I have been obliged to empty the uterus in spontaneous abortions which were not infected by interference, in only the rarest instances. Almost always it was sufficient to quiet the patient with a small dose of morphine, give fair sized doses of ergot, and apply an ice bag to the abdomen and a sterile dry dressing to the vulva.

The measures just advocated, though applicable in the home, cannot, as a rule, be enforced in a crowded and active hospital service. Here, as a matter of expediency, in order to save time and beds, immediate emptying of the uterus has been practised in uninfected cases in which no contraindications existed. In hospital surroundings, with abundant assistance and full anesthesia, harm rarely results. Need I emphasize the opposite extreme—the tenement house, the patient across the tumbled bed, the doctor as anesthetist, assistant, and operator combined? This is a sad, but common occurrence. The medical man who has to contend with such difficulties has my heartfelt sympathy, but my main aim and object has been to show that interference in these cases is but rarely indicated, and almost never imperatively required by the exigencies of the case.

2. *Postabortive bleeding.* The subsequent post abortum bleeding may prove annoyingly persistent and profuse. It also, however, in the absence of infection, usually disappears under nonoperative treatment. This is forcibly illustrated every day in my dispensary service, where I see large numbers of these patients. They grow alarmed and restive, and themselves demand a curettage after waiting for a few days. I apparently consent and have them apply at the hospital. Almost invariably it is necessary to put these patients on the waiting list, as they have not really urgent cases, and by the time they can be sent for, they are cured. They then present themselves to me with their letter of admission, and tell me that they do not want to be operated on.

The idea that the decidua of the early months, which is left behind, must be removed by curettage before complete involution can take place, is fallacious. When the ovum and its membranes are expelled the decidua gradually resumes its resting character of normal uterine mucous membrane from which it developed under the stimulus of pregnancy. Unnecessary removal of the decidua converts the interior of the uterus into an unprotected and poorly drained open wound. From personal experience I now know that these patients later conceive again, and carry to term even more frequently than such women as are curetted. The cause for this difference is also clear, and I shall recur to it in the discussion of annexal inflammation.

3. *Post partum.* Of 458 women who were curetted, in twenty the operation was performed post partum. According to my view I consider that the operation was performed exactly twenty times too often! Our hospital records show a far greater proportion because in this class of cases, particularly *after* the curettage, alarming symptoms develop and they are, therefore, at once transferred to such institutions. The mortality in this group is enormous.

After a properly conducted labor curettage ought never come into question. After expulsion of the child, the placenta should be delivered either spontaneously or by the Credé method. If through any cause the entire placenta or part of it is retained, it should be removed within a few hours—by means of the hand. Membranes remaining behind are rarely, if ever, the cause of future trouble. Those rare and terrifying instances in which violent post partum hemorrhage occurs because of complete or partial placental retention, require immediate manual removal of the afterbirth. These cases tax the aseptic preparations and personal readiness and courage to the limit. The majority of febrile cases in which the curette has been used post partum, and which we are then called to treat in the hospital or to see in consultation outside, are due to minor, slightly infected injuries of the parturient canal—tears of the vulva, vagina, cervix, and parametria—which have been extended and converted into severe general septic processes by the unwarranted and reckless use of the curette. Were the simple

rule of noninterference adhered to by both physician and midwife, a case, such as the following, ought never to present itself.

CASE. After normal labor a woman presented high temperature. On the second day she was curetted. Twice more within one week the curette was employed. When admitted to the hospital the uterus was found in a fair degree of involution: Death from acute streptococchemia occurred fourteen days post partum. At the autopsy the uterus was found empty and its muscular walls were exposed, except where covered by a few shreds of necrotic endometrium, all the protection left to it by these three unwarranted and harmful operations, which simply served to break down such barriers as the body could interpose against bacterial invasion.

In the hospital noninterference is not always possible, for quite often we are in complete ignorance as to the character of the third stage of labor in septic cases sent in from the outside. Looking over the histories of a large number of these cases, I have been impressed, however, by the fact that in most instances the uterus was found empty, and that the little tissue removed by intrauterine irrigation, the exploring finger or the curette (on the few occasions in which the instrument was employed) or demonstrated at autopsy, was nothing but normal decidual remains. Let me further emphasize a fact which is too often forgotten or not known. After labor the placental site is under normal conditions, distinctly elevated (nor depressed), and remains above the level of the uterine surface for several weeks. Hence we so frequently hear of rough, elevated areas in the puerperal uterus!

In thirty cases of post partum and post abortum sepsis which came to autopsy, placental tissue was found in only one. This single instance was that of a young woman with thrombophlebitis post abortum, in whom I tied off the pelvic veins and performed hysterectomy as a last desperate resort. The uterus contained a small amount of placental tissue at one tubal angle. It is of interest to add *that she had been curetted* before admission.

I have dealt in greater detail with the preceding important and frequent groups of cases, which represent more than seventy-five per cent. of all the curettages in my series. I now turn to a less common, but likewise, important, group, that of

4. *Ectopic gestation.* As you know, the symptoms of this disease at times closely resemble those of incomplete abortion—amenorrhea, moderate rise of temperature, followed by cramps and irregular bleeding of varying intensity, sometimes also by the expulsion of "uterine casts." The more subacute the course the greater the resemblance. Unless additional details in the history are elicited or a mass is felt lateral to the uterus in the annexal region, a serious mistake is sure to be made, and disaster precipitated by curettage. In a series of eighty cases of ectopic gestation which I have reported (3), no less than eight—ten per cent.—were curetted. One of this number was curetted in the hospital, tubal rupture resulted, and, though prompt measures were taken, the patient never rallied from the shock and loss of blood. Whenever even the slightest shadow of a doubt exists, it becomes imperative to avoid curetting, and to await further developments.

Solely for the sake of brevity I shall discuss the other group of cases in less detail, although their clinical importance warrants more extended mention.

5. *Inflammatory conditions.* Again turning to my statistics I find that of 200 patients curetted, post abortum fifty, or twenty-five per cent., showed inflammatory (parametric or tubal) lesions, while in an equal number, not curetted, only twenty-four, or twelve per cent. evinced such morbid changes. This proportion is not accidental and is fully borne out by the experience of many clinicians. It is almost of daily occurrence to have patients referred to the dispensary with recommendation for curettage, although no indications, but rather numerous contraindications, exist. It is true that these women suffer from irregular or profuse bleeding, but examination in a fair number of them shows that the hemorrhage is due to parametric inflammations, chronic gonorrheal cervicitis, pus tubes, or chronically diseased annexa with adherent retroflexions. The task of convincing these patients either that operation is not advisable, or that a more serious interference is required, is neither easy nor pleasant, particularly as it is necessary to protect the professional reputation of the confrère who has recommended that cure-all for women's ailments—curettage!

6. "*Endometritis.*" Formerly it was the fashion among gynecologists, not to mention the general practitioner, to curette for leucorrhea. To-day a saner viewpoint is gaining ground. The pathologist who shared the responsibility for this condition with the clinician is beginning occasionally to return a report labeled "normal" endometrium, instead of, as formerly, finding every uterine mucosa diseased. As, moreover, the patients are but rarely benefited, and occasionally are even worse off than before (lighting up of a latent cervical infection), we may hope that this practice will be generally abandoned. Leucorrhea in the vast majority of instances is of cervical, not of uterine origin.

7. *Sterility.* In this connection I will merely say that in those instances in which curettage appears to benefit the condition, the *dilatation,* which forms the first step of the operation, is probably the effective agent. Plastic operations on the cervix are of far greater value than curettage. Furthermore, ovarian disturbances most likely play a predominant rôle in female sterility, as I pointed out several years ago (4), and as has been emphasized clinically in an admirable paper recently published by Reynolds (5).

8. *Menorrhagia and metrorrhagia, preclimacteric and postclimacteric hemorrhages.* From the foregoing you might perhaps conclude that I was entirely averse to the use of the curette. If so you are wrong. I am opposed to its use when it is employed without discrimination, often without indication, and sometimes in the face of every contraindication that can exist, in one out of every five gynecological patients, including a not inconsiderable number of nulliparæ or even virgins. There are certain cases in which the use of the curette is not only of value but obligatory, not so much a curative, as a diagnostic agent. This is just the class of cases in which the general practitioner rarely employs the curette! And when he does use it, how often, I ask you, does he have the curettings examined?

The reply to that query has usually been that poor patients cannot afford to, and patients in better circumstances refuse to bear this extra expense. This is an evasion; the physician is at fault. With the united support of the profession I predict that in the course of two years the public could be educated to demand such examination, just as they now ask for a Wassermann test in suspected syphilis. Were the demand once established, the board of health, I feel sure, would make such examinations for the poor, just as they have in many other fields.

In menorrhagia, metrorrhagia, preclimacteric and especially postclimacteric hemorrhages,, where inflammatory lesions do not absolutely contraindicate, there the curette should be employed, sometimes even repeatedly. A certain proportion of cases will be cured or benefited; in others the failure will indicate that x ray treatment should be employed; in still others malignant tumors will be discovered at *an early stage,* so that radical and permanently operative measures can be undertaken.

I do not wish further to dilate upon this subject. I am well aware that, as the late Professor Alphons von Rosthorn, of Vienna, was wont to say, "the treatment of abortion is the bread and butter of the general practitioner," that our patients often themselves ask for the operation, and expect it to cure all their ills, that patients have left you because you refused to curette in case of bleeding. All this is true, but it rests with yourselves to change your views, and simultaneously to reeducate the public.

In conclusion, I desire to reiterate that the use of the curette is rarely necessary in abortion, practically never after labor, harmful in pelvic inflammation, and often fatal in ectopic gestation. Simple as the operation is in itself, it is a dangerous procedure unless controlled by careful limitations. The instrument is of value mainly for diagnostic purposes.

This paper was written in no carping vein, nor did any unfriendly spirit of criticism actuate its conception. The reason it was written was because we cannot expect the general practitioner to possess either the diagnostic or the operative training of the specialist. The specialist taught the practitioner the advantages of the operation; it is, therefore, his duty, likewise, to warn him of its dangers.

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983 PARK AVENUE.

GASTRIC ULCER.

Its Nonsurgical Treatment.

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An ulcer is essentially a surgical condition, and its treatment naturally belongs to surgery. The reason why we entertain the idea of a nonsurgical treatment of an ulcer of the stomach is found in the anatomical conditions present. An ulcer of the stomach lies so deep in the body that it can be treated surgically only after a previous preparation, which involves opening the abdominal cavity and exposing the patient to the dangers of a capital operation. It is that fact which makes it our duty to seek for methods of treatment for this condition other than surgical, if any such can be found which are efficacious.

The situation seems to be this: There are many cases of gastric ulcer which can be cured only by a radical operation; there seem to be also many cases which terminate favorably without an operation; autopsies frequently show scars of healed gastric ulcers, and cases showing clinical symptoms of gastric ulcer which have apparently ended well under treatment by nonsurgical methods have relapsed, and the infallibility of surgical treatment has not yet been demonstrated.

To tell how to differentiate the cases of gastric ulcer which should be operated in from those which can with justice to the patient be treated by nonsurgical methods, is not within the scope of this paper, nor is it within the power of the writer. He governs his conduct in this matter by the following general rule: He assumes that practically every case of gastric ulcer should be given a chance to be cured without an operation, and treats it accordingly at least once. If marked improvement, to say nothing of apparent recovery, fails to take place, then the question of an operation is considered. If after apparent recovery a relapse occurs, then the question of an operation comes up, but not so acutely as in the former class of cases; for sometimes a second course of nonsurgical treatment is more successful than the first. But if a relapse occurs after two apparent recoveries, with no good reason, then it is in order to consider seriously the question of an operation.

The nonsurgical treatment of gastric ulcer consists essentially in keeping the ulcer as quiet as possible. This involves primarily extensive modifications of the diet, also, except in the very mild cases, rest in bed.

The dietetic problem involved in keeping the ulcer as quiet as possible is solved most simply by exclusively rectal feeding, but that cannot be kept up in most cases for a sufficient length of time, and it becomes necessary to use the stomach. The problem then presents the following conditions: 1. To reduce to a minimum the quantity of substances introduced with, or produced from the food, which are directly irritating to the ulcer. 2. To provide such articles of food as will least excite the acid gastric secretion. 3. To provide such articles of food, and so to administer them that gastric peristalsis will be kept as low as possible. 4. To keep the stomach as empty as possible by providing food which will not naturally linger in the stomach and administering it in such a way as to facilitate its rapid passage through the stomach.

For convenience of dietetic treatment cases of gastric ulcer may be divided into three groups: 1. Severe; 2, average; and, 3, mild. The severe cases are those in which obvious hemorrhage has taken place or in which a high degree of gastric irritability exists. The average cases are those which show pronounced symptoms, but in which no ob-

vious hemorrhage has occurred, and in which gastric irritability is of moderate degree. The mild cases are those in which the symptoms are less pronounced and intermit for considerable periods.

TREATMENT.

1. *Severe cases.* The patient should be put to bed and kept there for at least four weeks. During the first two weeks he should lie as much as possible on his right side during the daytime, so that the food may more easily and quickly pass out of his stomach.

During the first four days, and in some cases for a longer time, the feeding should be exclusively by rectum, as follows:

Dietetic prescription i: 6:30 a. m. Give a drink enema of a pint of warm normal saline solution introduced high up in the rectum, to be retained. An ounce of lactose or dextrose may be dissolved in the enema.

8:30 a. m. give a nutritive enema consisting of five ounces of warm peptonized milk, in which has been dissolved a tablespoonful of dry peptonoids. If the enema is not well retained, two or three drops of deodorized tincture of opium may be added. Usually it will be retained.

12:30 p. m. Repeat the nutritive enema.
5 p. m. Repeat the nutritive enema.
8 p. m. Repeat the drink enema.
10:30 p. m. Repeat the nutritive enema.

Every other day a colonic irrigation with warm normal saline solution may be substituted for the first drink enema, if the rectal feeding is long continued or the rectum shows signs of irritability. A colonic irrigation or drink enema may be given in the middle of the night if the weather is warm and the patient complains of thirst.

After four days of rectal feeding, in a large proportion of cases, stomach feeding may be begun as follows:

Dietetic prescription ii: Every two hours between 7 a. m. and 9 p. m., give five ounces of a mixture of equal parts of peptonized milk and barley water. In addition, give three glasses of orangeade made with the strained juice of one orange and one ounce of milk sugar to each glass. Instead of peptonized milk, barley water and a soluble cereal food may be given.

Feed through a tube so that the patient will not move the body unnecessarily Have everything warm, not hot, except the orangeade, which may be cool but not cold. If these amounts are not well borne, give smaller amounts, and, perhaps, two of the drink enemas, above described

If the stomach takes the foregoing prescription well, the following prescription may be substituted for it without delay of more than one day:

Dietetic prescription iii: 7 a. m. Give five ounces of a two to one mixture of scalded milk and barley water.

8 a. m. Give five ounces of buttermilk, or lactacidized milk, or peptonized milk.

9 a. m. Give seven ounces of orangeade, or similar fruit juice preparation, sweetened with one ounce of lactose or dextrose.

10 a. m. The same as at 7 a. m.
11 a. m. The same as at 8 a. m.
12 a. m. Give five ounces of grape juice, or five ounces of a one to three mixture of grape juice, pineapple juice or orange juice and milk, well mixed.
1 p. m. The same as as 7 a. m.
2 p. m. The same as at 8 a. m.
3 p. m. The same as at 9 a. m.
4 p. m. The same as at 7 a. m.
5 p. m. The same as at 8 a. m.
6 p. m. The same as at 12 m.
7 p. m. The same as at 7 a. m.
8 p. m. The same as at 8 a. m.
9 p. m. The same as at 9 a. m.
10 p. m. Give one ounce of olive oil.

The various milk combinations may be interchanged freely. During the night more of the orangeade or similar preparations may be given.

After feeding according to the foregoing prescription for six days, the following changes in the diet can usually be made:

Dietetic prescription iv: Give dietetic prescription iii modified as follows: Substitute for the feedings at 8 a. m., 3 p. m., and 8 p m., five ounces of moist cooked cereals, preferably boiled rice, cream of wheat, or farina, served with cream of butter but no sugar, or, if they agree, give the three cereal feedings in combination with the feedings at 9 a. m., 3 p. m., and 9 p. m. in the same prescription.

By the beginning of the third week the diet can usually be changed to the following:

Dietetic prescription v: 7 a. m. Give eight ounces of milk and barley water mixture.

9 a. m. Give six ounces of cream of wheat or other acceptable cereal, with cream or butter, but no sugar.

11 a. m. Give eight ounces of buttermilk or lactacidized milk.

1 p. m. The same as at 9 a. m.
3 p. m. The same as at 7 a. m.
5 p. m. Give a plate of milk toast and a wine glassful of grape juice or pineapple juice.
7 p. m. The same as at 11 a. m.
9 p. m. Give six ounces of cooked cereal or macaroni, with cream or butter.
10:30 p. m. Give one ounce of olive oil.

Orangeade and other similar preparations may be taken freely if they agree.

Cereal foods and other similar preparations may be added to the milk and barley water mixture.

Early in the fourth week the diet may usually be still further modified, as follows:

Dietetic prescription vi: 7:30 a. m. Give from six to eight ounces of moist cooked cereal with cream or butter, two slices of toast with one or two poached eggs, or one or two ounces of cream cheese or pot cheese; and an orange or a baked apple.

10 a. m. Give eight ounces of lactacidized milk, or milk and barley water with cereal food.

1:30 p. m. Give from six to eight ounces of milk soup (viz., cream of corn, celery, potato, or carrot); six ounces of boiled macaroni or rice with butter; two slices of toast with one or two ounces of cream cheese or pot cheese: a baked potato; and a small portion of spinach if it agrees.

4 p. m. The same as at 10 a. m.
6:30 p. m. Give a plate of milk toast; a baked apple; and two slices of toast with one ounce of cream cheese.
10 p. m. Give one ounce of olive oil.

Give orangeade and the fruit preparations freely.

In the fifth week, if the symptoms have all disappeared, a return to ordinary diet may be begun, with restrictions. This return should be very gradual. The easily digestible vegetables, particularly spinach, lettuce, string beans, baked potato, carrots, *raw* cabbage, and possibly green corn, are desirable to combat the constipation which is so often present. The bland fruits also should be given as freely as possible. Beside eggs, a little meat, fish, and poultry may be added to the diet, but in general it may be said that animal food, except milk, should be very much restricted for a long time, also sweets.

The foregoing dietetic prescriptions are given as samples or standards, and admit of extensive modifications to suit special cases and conditions.

The periods during which the various prescriptions should be taken vary in length in different cases; the periods given are those which will be found satisfactory in a good proportion of cases.

Beside the regulation of the diet, which is the most important thing in the treatment, together with rest in bed, it often happens that other therapeutic procedures are necessary to meet particular symptoms and complications.

The bleeding cannot be directly treated, but gas-

tric peristalsis can be quieted by morphine, which should be given in sufficient doses for the purpose.

For constipation, olive oil may suffice, but usually other laxatives are required. Vegetable laxatives should be preferred.

The anemia, which is usually present, calls for iron, which can be most advantageously given in the form of the peptonate.

2. *Average cases.* The treatment of the average cases differs from that of the severe cases only in the fact that the preliminary course of rectal feeding may usually be omitted, and that the changes from one dietetic prescription to that next in order can often be made more quickly. In these cases, however, it is good treatment to begin with a few days of rectal feeding.

3. *Mild cases.* Patients with mild symptoms usually refuse to stay in bed, and have to be considered as ambulant cases. Their treatment is less satisfactory than it would be if the subjects remained in bed for the regular period. These cases can usually begin with dietetic prescription v, above mentioned, or, if it is convenient for them to take it, dietetic prescription iv. If they do not do well while walking around after a short trial, the writer insists on their submitting to the rest in bed and the regimen recommended for the average cases. Many of these cases do well, especially those whose symptoms occur at intervals and are brought on by dietetic indiscretions.

Such is a brief résumé of the main features of the nonsurgical treatment of gastric ulcer employed by the writer.

As an illustration of the possibilities of nonsurgical treatment in a severe case of gastric ulcer, the following report is given:

CASE. Gastric ulcer with severe hemorrhages; patient fed exclusively by the rectum for twenty-four days; recovery. The patient, a man of twenty-six years, had suffered from "indigestion" at different times during the past two years, but had had no other symptoms pointing to gastric ulcer. The pains in his stomach came on one or two hours after eating and were relieved by taking more food.

He was admitted to the writer's service in the Norwegian Hospital, April 4, 1911. Two days before admission he was taken with nausea while at work, and suddenly collapsed. About ten minutes later he vomited a small quantity of blood. Twice during the next forty-eight hours he vomited large quantities of blood, estimated at over a quart. On admission to the hospital he was very pale, his mucous membranes were blanched, and a soft, systolic murmur was audible in the pulmonary valve area. Surgeons were called in consultation, but they refused to operate on account of the extreme anemia.

He was put on dietetic prescription 1, as already described, and morphine hypodermatically, sufficient to keep the respirations down to fourteen a minute, was ordered. Six days later he again vomited blood, twice, with an interval of fifteen minutes, the aggregate amount being thirty-five ounces. On the eleventh day after admission he complained of a sensation of fullness in the stomach, and a few minutes later vomited twenty ounces of blood. On the twelfth day he complained of no gastric symptoms but was absolutely blanched.

The rectal feeding and the morphine were kept up steadily for twenty-four days, during which time absolutely nothing entered the patient's mouth except a moist rag and an occasional small piece of ice. He retained the enemas well, and his respirations were kept between twelve and fifteen a minute, and his pupils were kept well contracted.

April 29, 1911, the twenty-fifth day after admission, he was first given food by mouth, in the form of a little dry peptonoids dissolved in hot water. This was retained, and the following day he was allowed peptonized milk and barley water, and subsequently the dietetic course already outlined. His improvement was continuous, and his recovery apparently complete.

CONCLUSIONS.

In conclusion the writer would like to repeat and emphasize the following points:

Practically every case of gastric ulcer is entitled to at least one chance to recover without an operation, and most of them are entitled to more than one chance.

The nonsurgical treatment of gastric ulcer consists essentially in keeping the ulcer as quiet as possible, which is best effected by rest in bed for at least four weeks, and a diet which will least irritate the ulcer and least excite gastric peristalsis.

Rectal feeding in the beginning is positively called for in all severe cases, and is desirable in the others. It may be kept up for a considerable period, especially if morphine is given in fairly large doses.

The ulcer is least irritated by articles of food which are free from spices, condiments, acids, sugar, and indigestible residue, and which do not powerfully excite the secretion of the acid gastric juice. In other words, the ulcer is least irritated by a diet of modified milk and milk products, cereals, and bland fruits.

Gastric peristalsis is least active if the food, in addition to being chemically unirritating, is fluid or semifluid, also if it is introduced in small quantities at a time.

Speedy emptying of the stomach is facilitated by the patient lying on his right side as much as possible during the time that food is in his stomach.

The return by the apparently recovered patient to ordinary diet should be very gradual; especially moderate for a long time should be his indulgence in food that is slow of digestion, of sweets, and of animal food which stimulates strongly the secretion of acid gastric juice.

Olive oil is soothing to the ulcerated stomach, is good food, and is laxative.

Drugs, as such, are of very little use in the nonsurgical treatment of gastric ulcer.

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THE HEMATOLOGICAL EQUILIBRIUM IN PULMONARY TUBERCULOSIS.*

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These studies were begun in the latter part of 1908, after the encouraging reports on the Arneth count by Klebs in this country and by various other observers in Europe. They were begun with high expectations from the Arneth count, which was thought to be a settled aid of known quality and was adopted as a routine in tuberculosis work. Great was the disappointment of the writer when the very first blood smear had shown quite a different picture in the morphology and arrangement of polynuclear cells than the one shown in Arneth's

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book, *Die neutrophilen weissen Blutkörperchen.* Instead of being broad, flattened, with well defined demarcation lines, they were often, rather too often, found to encroach one upon another, intertwine, and cross in such a manner that counting them was a task well nigh impossible for an inexperienced eye.

Fifty smears were then studied for the sake of technic alone. To learn how to distinguish the number of nuclei and their relation one to another, from three to five hundred cells were studied on each smear, so that 20,000 cells were studied before counting was begun. And still, even with these preparations, the Arneth count gave contradictory results. Good counts with little or no shift to the left found in advanced cases, while bad counts observed in incipient or good cases (as judged by physical examinations and histories) were met too often to consider the Arneth count to be of service in the diagnosis or the prognosis; and after one year of work, after another twenty thousand cells had been carefully counted, more than a hundred slides have been discarded and a new study begun.

This time it was not based on the Arneth count alone, but in combination with the estimation of the other elements of the blood, the leucocyte count, the hemoglobin, differential count, the eosinophiles, etc., were taken into consideration. The following is the result of 352 such observations on the blood obtained from 181 patients.

Almost every observer has reported a different count on every kind of cell in the blood; this is probably due partly to the personal equation of the observer and partly to the climate and other environments surrounding the patients; it therefore became imperative to establish a standard for my own observations. For this purpose the blood of ten healthy persons was examined, twenty-three examinations being made in all, the result being as follows:

Hmgl.	W.B.C.	Lymp.	Esn.	Tran.	I.	II.	III.	IV.	V
90.33%	6060	26.6	3.26	3	5.33	34.74	42.1	15.5	2.33

Total nuclei (our index), 274.

Arneth's polynuclear picture is as follows:

I.	II	III.	IV.	V.
5	35	41	17	2

Total nuclei, 276.

The blood was invariably taken between the hours of 10:30 and 12 a. m., about three or four hours after breakfast, so as not to be interfered with by the leucocytosis of digestion. The blood was taken at different mornings from the same individual, so as to observe if there were no great changes in the same subject; such changes were not noticeable to such an extent as to invalidate the observations. The difference in the hemoglobin proportion and white cell count did not vary more than six per cent. on an average, never higher than eight per cent., and these variations would go parallel most of the time. The total nuclear count (our index) would show a variation of not more than four nuclei, most of them only one or two nuclei, and five times it was the same as on previous examinations.

At the earlier part of our work the Bushnell and Treuholz index for the Arneth count was used, but later we discarded it and adopted the total number of nuclei as our index, for reasons that will be explained later.

In all, from 181 patients 352 blood specimens were examined, not counting of course those that have been discarded, as mentioned above. Some patients' blood has been examined six and seven times, that of others only twice, the majority's (102 patients) only once. After examining about 100 blood smears and studying the histories of the respective cases, some more or less definite conclusions were formed, that the correlation between the various cells is a constant one, that the disturbed equilibrium in their relations is due to the success or failure of the restorative processes that are continually going on.

To save ourselves the labor of tabulating all the 352 observations, we have picked blindly fifty cases, and made up the average from them for tuberculous patients. As these averages would only be slightly changed, if changed at all, when made up from all cases, we have adopted them, so as to contrast them with our averages in healthy individuals.

Our average for tuberculous patients is:

Hmgl.	W.B.C.	Esn.	Tran.	Lymph.	I.	II.	III.	IV.	V.
77.3	10,280	2	4	23	11.34	39.42	39.84	8.00	1.40

Total nuclear count, 249.

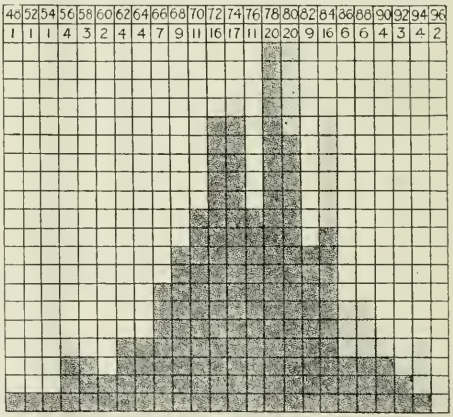

FIG. 1.—Hemoglobin chart. The figures in the upper row designate the hemoglobin percentage, those in the lower row the number of patients; the shaded squares denote doubtful cases, the black squares positively tuberculous cases.

THE HEMOGLOBIN ESTIMATE.

In making the hemoglobin chart, I have used the percentages of the hemoglobin found at the first examinations of the 181 patients, the great majority of whom were tuberculous, but some were doubtful. Those that proved to be at the second or successive examination nontuberculous are not included in this chart or any of our counts. The difference between the hemoglobin average of the healthy and the one of the tuberculous is thirteen. If I should add to this the information that twenty-six of the 181 patients had doubtful cases, that did not appear for a second examination, and that only in two of the cases the hemoglobin was below seventy-seven per cent., and in the other it was eighty per

cent. and above, the difference in the percentage would seem much greater and look more important. Still, as an important factor in the diagnosis and treatment of pulmonary tuberculosis, the hemoglobin percentage can hardly serve, as among the non-tuberculous we find a good many whose hemoglobin register is below the one of many tuberculous patients. With other elements in the blood chart, with the physical signs, history, etc., the hemoglobin may serve as an additional factor of information, but only as such in considering the progress or the arrest of the disease.

THE RED CELLS.

The red cells in tuberculosis have been studied much earlier than the present studies were undertaken, and no changes were found, neither in the morphology nor in the number of the erythrocytes. The usual explanation given is that while the total number of the red cells may be diminished in pulmonary tuberculosis in the human economy, their number per volume of blood remains the same, as there is a loss in the fluids of the blood as well, these losses being caused by diarrhea, night sweats, and increased expectorations. These observations, as most, if not all, were made in sanatoria or health resorts, where early incipient cases are very few, if any. If red cell changes do occur, they probably do so before night sweats, profuse expectorations, etc., appear as symptoms, i. e., in the very early cases, and such should and could be studied to better advantage in the larger cities, where material of this character is plentiful and can therefore be obtained with ease.

THE LEUCOCYTES.

The number of leucocytes in our cases we found to vary a great deal, from 4,200 to 19,000. Below six thousand we found them only in rapidly progressing cases, otherwise they would vary from seven to ten thousand in the ambulant cases, where the tuberculous process is either quiescent or only very slightly progressive; in the active progressing cases the number of the white cells would be from ten to twelve thousand and sometimes it would reach as high as fifteen thousand; while in lethal cases the number of white corpuscles would run abnormally high, from fifteen to nineteen thousand, or abnormally low—below six thousand or even five thousand. A decrease in the leucocytes, it was noticed, would often be followed by a relapse in cases that were thought to be doing well. I am not prepared to conclude that the decreased number of leucocytes was the beginning of the relapse. I am rather inclined to think that the decreased number of the white cells due to various causes, one among them diet, was not sufficient to withstand a new onslaught of the disease or some intercurrent complication. Here are a few illustrations:

Case I. B. F., Austrian, collector for an industrial insurance company, aged forty-two years, married, regular habits and mode of life; a distant relative died of pulmonary tuberculosis, felt attacks of weakness and shortness of breath coming on too often for the last year; consulted physicians, and the case was diagnosticated properly, with a recommendation to stay in the country a few months. On arrival here patient sought no medical advice, as he felt no pains and felt more comfortable than at home; but he took daily walks over the hills, on the advice of an "experienced" fellow patient, "to increase his breathing capacity." His condition grew worse, weakness and shortness of breath increased, but with very little cough and hardly any expectoration. Physical examination revealed a fibrous condition of the entire right lung with a disseminated infiltration of lower half of left. Temperature 97.5° F., pulse 124, respiration 34. Blood examination gave:

Hmgl.	W.B.C.	Lymp.	Esn.	Tran.	I.	II.	III.	IV.	V.
68	5400	17	0	6	18	34	38	9	1

Total nuclei, 241.

Patient was ordered perfect rest, a richer protein diet than he usually had, and within two weeks began to improve somewhat as to weakness and shortness of breath. Blood examination showed the following:

Hmgl.	W.B.C.	Lymp.	Esn.	Tran.	I.	II.	III.	IV.	V.
70	6200	18	0	7	16	34	39	10	1

Total nuclei, 246.

The slight improvement in the leucocyte count and the still smaller increase in the other elements of the blood were probably due to rest and better feeding. The patient got tired of rest, resumed his walks, and grew worse again; with this was a decline in the leucocyte count below 5,000. He was taken back to the city; where he died in about two months. This was probably a case where the bone marrow or the other leucocyte sources were either exhausted by the prolonged disease, or for other reasons were not able to produce white cells.

Case II. A. A. F., Irish-American, clerk, aged thirty-four years, single, alcoholic habits, family history tuberculous. A far advanced case, cavities in upper and lower right, consolidation of upper half of left, no complications, no other organs being involved. First blood examination has shown the following:

Hmgl.	W.B.C.	Lymp.	Esn.	Tran.	I.	II.	III.	IV.	V.
70	5600	13	6	11	30	49	18	3	0

Total nuclei, 194.

The second examination a week later revealed:

Hmgl.	W.B.C.	Lymp.	Esn.	Tran.	I.	II.	III.	IV.	V.
62	4200	10	4	15	54	31	14	1	0

Total nuclei, 162.

He died three weeks later.

Case III. R. S., female, aged twenty years, far advanced, had been sent away from a sanatorium to make room for a more hopeful case. On arrival at Liberty, contrary to expectations, she began to improve. Treatment at the beginning was symptomatic, and the first thorough physical examination was made four weeks after her arrival with the following result: Good sized cavity in the left upper lung and a disseminated infiltration over the rest of both lungs. Bacilli found in the urine, left kidney involved. Blood examination gave the following picture:

Hmgl.	W.B.C.	Lymp.	Esn.	Tran.	I.	II.	III.	IV.	V.
68	12,000	25	2	3	10	38	41	9	2

Total nuclei, 225.

Patient was feeling well for some time, but her ear and throat became affected, and she grew worse. A blood examination revealed the following:

Hmgl.	W.B.C.	Lymp.	Esn.	Tran.	I.	II.	III.	IV.	V.
56	15,000	14	1	3	19	49	31	1	0

Total nuclei, 214.

One month later patient, growing still worse, gave a blood picture as follows:

Hmgl.	W.B.C.	Lymp.	Esn.	Tran.	I.	II.	III.	IV.	V.
Not taken	19,000	10	0	11	26	53	21	0	0

Total nuclei, 195.

Patient died two days later.

This was a case where the leucocytosis was high, the bone marrow and the other sources of white cells were very responsive, which probably explains why the patient clung to life so much.

I have seen eight more lethal cases where blood counts were made and the leucocytosis was high in them.

Arneth, in his work, mentions two cases where white cell counts were made. He leaves these counts without comment, as he is intent on the polynuclear cell; these counts are similar to those of

mine. One case (68. W. K.) has 16,500 in the prelethal state, while the other (70, G. A.) shows only 6,200 white cells, what is certainly too low for an active case in pulmonary tuberculosis. I have also invariably noticed improving cases that stay improved or become arrested later on show a gradual loss in leucocytes and come down to almost 7,000. It is from these and other cases that came under observation that the impression was gained that though the leucocyte count by itself may not be of great diagnostic value, it is an important aid in treatment and prognosis. A low white cell count in any active case is a great drawback, an evidence of lack of resisting powers. A sudden rise in a quiescent case is evidence that some deleterious process has gained a foothold, and we must be on guard. A gradual rise in the white cell count with a corresponding change in the other elements in the blood, together with physical signs of improvement in an active case, is a welcome evidence of an increase in resisting powers, and that the improvement is not a momentary one.

THE EOSINOPHILES.

The eosinophile seems to be a cell of some significance in pulmonary tuberculosis. As to its frequency, there is less disagreement among observers than in reference to other cells. This is certainly partly due to the small numbers in which this cell is found, so that the disagreement cannot be great either, but principally is this on account of the striking characteristic of the eosinophile itself, its sharp contrast to other cells. In my observations on healthy subjects, it was found to be present in an average of a little above three per cent., ranging between two and five per cent., but mostly three and four per cent. In the tuberculous it was always found in a decreased percentage and, unlike the other forms of leucocytes, its increase or decrease in numbers does not depend on the severity or activity of the process, but mostly corresponds to the anatomical and histopathological changes in the lung; and it is always in the inverse proportion, the more extensive is the process; the lower is the percentage of eosinophiles present in the blood. In the far advanced cases the eosinophiles are absent. There are some exceptions. In one of my cases it reappeared to a degree of one per cent. (400 white blood cells were counted) in a progressing case, while in another case (Case ii, A. A. F., cited above) it appeared as high as six and four per cent. in the prelethal state. In several other advanced and fatal cases it was never demonstrable, while patients were under observation.

THE LYMPHOCYTES.

In counting the lymphocytes no distinction was made between the large and small ones. As a rule the large lymphocyte was found to comprise about ten to fifteen per cent. of the entire number of lymphocytes, or only about two to three per cent. of the entire leucocyte count. In a very few exceptional cases the large lymphocytes were the predominant ones. With others I am inclined to believe that both are one and the same class of cells.

As to importance, the lymphocyte seems to be the most important cell in pulmonary tuberculosis, the main support of all the blood elements in the disease. Its numerical changes would be followed by changes in the leucocyte count and also by one in the neutrophiles. A decrease in the number of lymphocytes would always indicate either a coming exacerbation of the disease or an arising complication. In my observations I found it to be the most sensitive register of the state of resistance to the disease. A fall in the lymphocyte count below or near twenty, or generally a fall in its count, was a warning to be on guard against a coming storm. In this as in the case of lowered leucocytes it seems the decrease in the number of lymphocytes has caused a decrease in the resisting powers. The lessened numbers even with an increased leucocytosis were always a danger sign that proved to be true every time.

Case IV. Miss M. M., aged twenty-three years, moderately advanced pulmonary and laryngeal tuberculosis, doing comparatively well, regaining health, voice beginning to be less husky, pain in the throat from constant to occasional only. Blood examination showed:

W.B.C.	Lymp.	Esn.	Tran.	I.	II.	III.	IV.	V.
9,400	22	1	3	8	33	46	11	2

Total nuclei, 266.

One month later patient was doing still better, pain in throat had not been felt for the past nineteen days, voice only slightly husky at times. Blood showed:

W.B.C.	Lymp.	Esn.	Tran.	I.	II.	III.	IV.	V.
8,000	25	1	4	4	34	43	14	2

Total nuclei, 270.

Patient got careless, dropped out of observation for three months, went to the city visiting; on return complained of tired feeling, anorexia, insomnia, but no cough nor pain, pulse rapid, 132, temperature 98.2° F. Blood gave the following picture:

W.B.C.	Lymp.	Esn.	Tran.	I.	II.	III.	IV.	V.
12,600	17	1	5	10	46	36	8	0

Total nuclei, 242.

The low lymphocyte, with the high leucocyte count indicated that an active process was going on, the resistance is to small for it, and that a stormy time is to be expected. Patient was put to bed, hospital rest ordered, still temperature rose within a few days, patient grew worse from day to day, had an acute exacerbation. It was a case of autoinoculation; as soon the lymphocytes notwithstanding the high leucocytosis, were decreased, the patient broke down. Later in this attack the lymphocyte count came down to fourteen. In about six weeks patient began to improve and the blood gave the following picture:

W.B.C.	Lymp.	Esn.	Tran.	I.	II.	III.	IV.	V.
9,600	20	1	2	10	36	45	9	0

Total nuclei, 253.

Of nine cases in 1910 whose lymphocyte count was below 20, and did not rise notwithstanding treatment, only one was known to be alive in July, 1912; five died within a few months, two died about one year later, and one could not be traced. Of twelve patients with low lymphocyte counts in 1911, four were known to be living in July, 1912, six are dead, and two could not be traced.

As in the case of leucocytes, I have cited counts from other observers, who were not bent on the leucocyte, to prove my contention, so here I shall quote others, namely Swann and Karsner, whose attention was directed to the esinophiles exclusively, and were not considering the lymphocytes.

Their case one has only one count and will not be considered. Case II (A. A. F.) shows on November 9, 1904, lymphocytes 14.8 per cent.; on November 17th 8.8 per cent., on November 23d 12.4 per cent.; five days later the patient died. Case III. November 9th lymphocytes 13.6 per cent., November

17th 5.6 per cent., November 23d 18.2 per cent., November 30th 7.6 per cent.; four days later the patient died. Case IV. November 9th lymphocytes 14.8 per cent, November 17th eight per cent., January 5th (1905) eleven per cent.; patient subsequently died. Case V was very instructive; patient had a lymphocyte count of 33.6 per cent. and was in an ambulant condition, but later on began to grow worse, got weak, and was put to bed; his lymphocyte count came down to twelve per cent.; before death his lymphocyte count increased. This prelethal increase is quite prominent in a good many of their cases, but it is not constant. I have not noticed enough of it in my observations to draw any conclusions, but this failure on my side may be due to the fact that I did not have the control of the patients in their last moments, and therefore could not make the majority of my counts as late as Swann and Karsner made theirs. Of the thirty-one cases Swann and Karsner have reported twenty-nine terminated fatally, the other two did not terminate in this manner, but these two cases had a good or a fairly good lymphocyte count.

THE TRANSITIONALS.

In healthy subjects I found transitionals to be present in the blood in the average of three per cent., in tuberculous individuals the average reached only four per cent.; at first sight the difference is not great, but the changes in progressing cases are quite noticeable. It ran up at times to fifteen per cent. in rapidly progressive and lethal cases, while in the stationary or improving cases there was rarely a change from the healthy average, always ranging between two and four per cent. If it rose above it, that would indicate some increased activity in the diseased process. The increase in the percentage of the transitionals seems to go in a parallel line with the Arneth count; the more this shifts to the left, the higher the percentage of the transitionals.

As transitionals, only such were considered whose nuclei have shown a deep indentation (at least half a diameter of the cell) and assumed a horseshoe shape or a semicircular appearance, but still occupying almost the entire cell. From their close relation to the Arneth drift leftward the conviction has grown firmer that the transitional is the parent cell of the polymorphonuclear neutrophile.

THE ARNETH OR POLYNUCLEAR COUNT.

The Arneth count has been a bone of contention for the last five years among American and European observers; there are hardly two observers that have perfectly agreed with Arneth estimate of his polynuclear picture in healthy individuals; while on the blood picture of the diseased some have asserted entirely opposite results, drifts to the *left* in cases *improving* from pulmonary tuberculosis. In my first experiences I noticed that my counts did not coincide by far with those of Arneth. I have therefore counted fifty smears, counting 300 to 500 on each, and then counted one hundred smears, counting 200 in each, so I counted about forty thousand polynuclear cells before my counts agreed with Arneth's and before my actual work began. I examined the blood of ten individuals in perfect health, making twenty-three examinations in all, and nine almost totally agreed with Arneth's. Average in my counts:

I.	II.	III.	IV.	V.	Index (total nuclei).
5.33	34.74	42.00	15.50	2.33	274

Arneth's healthy average:

I.	II.	III.	IV.	V.	Index (total nuclei).
5	35	41	17	2	276

It is worth while to note that some observers who reported three years ago discrepancies between their counts on blood from healthy subjects and those of Arneth, have reported lately much smaller discrepancies and come nearer to Arneth's normal blood picture. It seems that the confusion on the Arneth count depends, first, on the experience of the observer, and, second (a very important item for consideration), the personal equation of the observer. I am therefore of the opinion that the average given by Arneth in round figures is about the nearest to reality, and I as well as others can give up with good grace our averages expressed in rows of decimals for the round figures of Arneth.

As an index, the total number of nuclei in all five divisions was adopted. I think it more appropriate than the generally accepted index of Bushnell and Treuholz. Bushnell and Treuholz make the *sum of cells* in the first, second, and half of the third division as their index. Their contention—that as the shift is toward the left half of the table, therefore the increase in that half should and must be the index—is certainly a valid contention, but valid only to an extent. I have noticed, as probably others did, that the shift to the left is too often not uniform—that the shift is usually greater from division two to division one, and from division four to division three, while division five would be affected much less: more than this, there are at times, in advanced cases, shifts to the right during improvement or after arrest of disease; there are more cells in the division five than there are in the healthy, as the following will illustrate:

CASE V. Mr. H. S., a far advanced case, suffering for twelve years from pulmonary tuberculosis; he was in the resort all this time, took cure and saw physician only in time of exacerbations, or when he felt better after them and wanted to be freed from strict rules of discipline. On one examination during an exacerbation his Arneth count ran as follows:

I.	II.	III.	IV.	V.	Index.
15	37	37	9	2	246

This was certainly a shift to the left, but the division five held its own, while division three did not give in very much; more noteworthy is his Arneth blood picture when improved:

I.	II.	III.	IV.	V.	Index.
4	34	42	16	4	282

His index and his division five were better then in the healthy. As to our Case III, cited in reference to leucocytes, its division five contained two with a shift toward the left otherwise.

CASE VI. Mr. A. P., moderately advanced case of three years' standing, complicated with asthma, that he had been suffering from since early childhood, his Arneth count was as follows:

I.	II.	III.	IV.	V.	Index.
9	40	39	8	4	258

CASE VII. Mr. M. R., moderately advanced pulmonary and laryngeal tuberculosis, diabetes mellitus was the complication; his Arneth was as follows:

I.	II.	III.	IV.	V.	Index.
11	32	44	10	3	262

From the 352 counts thirty could be cited that were of such character. The most important about them is the fact that this peculiar count was met only in advanced cases and usually when the process was quiescent; they were never met in the incipient cases. For the explanation of this I could not think of anything but the theory of survival of the fittest, i. e., I had to construct the following hypothesis: "The higher nucleated cell that passed through a cycle of development under adverse environments is comparatively a more resistant cell than the cell with the same number of nuclei, that developed under ordinary circumstances."

The Bushnell and Treuholz index gives no clue about these more resisting cells. The resistance of cells, according to some observers, depends on the number of nuclei they contain, the nuclei being the chief factors either in the phagocytosis or in the antitoxine production. The Bushnell and Treuholz index deals with the first half of the Arneth table, with the number of the younger cells, it masks the relation between the division 1, 2, and 3, and tells nothing about the nuclei; their index therefore shows the readiness or the ability of the bone marrow or the other source to produce polynuclears, but on this point the white cell count gives about as much of information. From the Arneth count we expect more information about resisting characteristics than this. I, therefore, in view of the double shifting and the retention of their numbers by the higher nucleated cells, adopted as an index the total nuclear sum.

When the observations were complete and also the greatest part of the paper, I looked over my counts once more, those of Arneth, and of other observers that confirmed Arneth, and I was agreeably surprised by the following coincidence: In the healthy Arneth blood picture the sum of nuclei in the divisions one and two plus half the division three almost equals the sum of nuclei of half the division three plus those of four plus those of five; this points to an equilibrium in the Arneth blood picture. I decided to try this as an index; from this arrangement of cells I concluded that it takes in a healthy subject an equal amount of nuclei in the left half of the chart to produce a number of higher nucleated cells with an equal amount of nuclei; should then the number of nuclei in the right half of the chart become less than in the left half, that would signify that the cells as designated in the left half of the chart are of a lessened resisting power or they are meeting more difficult environments, and therefore, while undergoing the cycle of development, are not able to reach a degree of higher nuclearity than otherwise. The lessened resistance, whether due to a weaker cell or to more unfavorable surroundings, would be then in the same proportions as the number of nuclei of the higher nucleated cells of the right are to the number of nuclei in the cells designated in the left half of the chart. Considering the ordinary resistance to be one hundred per cent. (the number of nuclei in both halves of the chart being equal), we can figure out the resistance in percentage by the following equation: X:100=(the sum of nuclei in the right half): (the sum of nuclei in the left half). To illustrate, one of our cases had the following Arneth count:

I.	II.	III.	IV.	V.
20	43	29	7	1

The equation in this case should be constructed as follows:

$$X:100=(43.5+28+5):(43.5+86+20)=51 \text{ per cent.}$$

Those whose counts on healthy subjects do not agree with Arneth's will have to work out two equations.

I have picked out twenty cases from my records, cases in various degrees of activity and extents of the processes of the disease, and found that this index gave a good measure of their resistance, judging by their subsequent histories. It would take too long to illustrate with cases; any one can easily verify it from those cited above.

THE TECHNIC.

As to technic, the cleanliness and the sterile conditions of the slide and the noncontamination of the blood was well taken care of. The Wright's stain was used principally; of other stains the Nocht-Jenner gave quite satisfactory results, but Wright's gave the best.

The blood smears were never examined the day they were made, but when a sufficient quantity was collected, two men were engaged in the counting, one at the microscope, who called out the cells as he saw them; he did not know whose blood was being examined, nor did he know how the count was running, except from a vague idea received while calling out the cells; the other man kept the tally sheets. All cells were counted and placed in their columns in the tally sheets. Polynuclear cells, whose nuclearity could not be determined after five minutes of observation, were placed in a special column of undetermined, so as not to interfere with the count of lymphocytes and other cells. When eighty cells were counted, the one at the tally sheets kept closer watch, so when one hundred cells were counted, he had the percentages figured out and noted without telling anything to the one at the microscope; when the count of the second hundred was also complete, and if the averages of the lymphocytes in relation of the first hundred to the second was more than ten per cent., a third hundred would be counted, and if the percentage of the third hundred was not within the variations of the first two hundreds a fourth one would be counted, and the average would be made up from the four hundred. The one at the microscope took no part in these calculations.

As to the polynuclears, the total nuclear sum of the cells counted in the first hundred was compared with the total nuclear sum of the second hundred, and if the difference was not greater than *ten*, then enough nucleated cells would be counted so as to have counted two hundred nucleated cells and an average made up, but if the difference was greater, a third hundred would be counted and its nuclear sum be compared with average of the former two hundred, and if the difference was more than four per cent., a fourth hundred would be counted and an average made up. Three hundred cells I had to count in about fifteen per cent. of all the cases, but

four hundred only eight or ten times in the three hundred and fifty-two counts.

From observations the impression was gained that the lymphocyte count generally runs parallel with the Arneth count. In the desire to verify this contention, and also to see the effect of tuberculin on the Arneth count and to note differences in personal equations, the staff of the Workmen's Circle Sanatorium was requested to make differential and Arneth counts on all new arriving patients, and also to make counts from the blood of patients who would react to tuberculin given for diagnostic purposes (O. T.). Of these reacting patients the blood was to be examined during and forty-eight hours after reaction. To have as little influence over the counts as possible, the object of the investigation was not told to the staff. Not being aware of the element of personal equation in the count, the results in reference to the relation of the tuberculin reaction was almost lost; one of the staff would make the count on arrival of the patient, i. e., before the reaction, another during reaction, and the one forty-eight hours after the reaction was quite often made by a third person. Still four cases of reaction were observed by one and the same person and these four cases show a diminished lymphocyte and Arneth count and a return to the previous one or above it after the reaction was over.

In reference to parallelism of the Arneth and lymphocyte counts, thirty-seven counts were made by one and the same man on newly arrived patients, and these counts bear out the contention that the higher the lymphocyte count, the higher also is the Arneth's. Accompanying chart illustrates this.

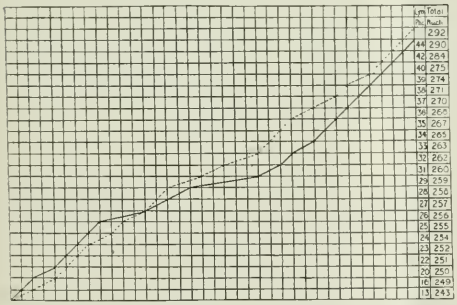

Fig. 2.—Illustrating parallelism between the lymphocyte count and the total nuclei in the Arneth count. The broken line denotes the Arneth count, the black line the lymphocyte count.

This parallelism is constant in the quiescent or slowly progressing cases, while in the others this is disturbed, and from these disturbed condition the impression was gained that it is the lymphocyte that is the pivot point in the equilibrium of the blood. It is either the more sensitive element or the one whose presence in adequate proportion is required to keep the polynuclears in their normal numerical relations. It is the lymphocytes that become first affected and are followed by changes in the polynuclears.

Case VIII. Mrs. M. M. N., German, worked as a waitress, kitchen maid, and kept at intervals a boarding house for tuberculous people; complained of tired feeling, unusual with her, loss of appetite, an occasional cough in the morning; as to physical signs they were negative according to some and suspicious according to others who examined her. Blood gave the following picture:

Hmgl.	W.B.C.	Lymp.	Esn.	Tran.	I.	II.	III.	IV.	V.
94	6,400	16	9	8	9	34	42	13	2

The total nuclear count was 265; according to my personal equation it was a good index, but the lymphocyte count in her case was poor; the patient grew worse, and in two weeks showed high temperature, cough got more persistent. Her blood examination at that time gave the following result:

Hmgl.	W.B.C.	Lymp.	Esn.	Tran.	I.	II.	III.	IV.	V.
86	9,000	14	8	12	15	39	41	5	0

The total nuclear count came down to 238. Her comparative eosinophilia was probably due to her asthmatic bronchitis that obscured the diagnosis; the patient showed positive sputum afterward.

Our Case IV, that of Miss M. M., serves also as a case illustrating that the disturbance in the lymphocyte count proceeds the one in the count of the polynuclear. I can cite several cases that would illustrate the same, but I believe the two are sufficient.

As to the leucocyte count, the following has been noticed, that it begins to diminish as soon as the lymphocyte count begins to increase; the same Case IV illustrates this.

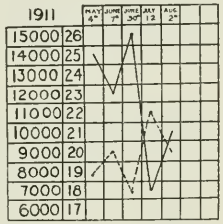

Fig. 3.—Relation of the lymphocytes to the white blood corpuscles count; the broken line denotes the percentage of the lymphocyte, the black line the number of white blood corpuscles.

Taking all in all, the blood pictures obtained by the various counts reflect a great deal the processes going on in our system during disease, and in pulmonary tuberculosis they show the negative and positive phases quite as well, and in my estimation much better than the opsonic index; they show more elements in the blood that are of importance than the opsonic index does. There is no necessity of formation of classes, nor constant new specimens of blood from healthy subjects with every examination; the counts can be made with very few appliances and one case at a time. These counts seem to be of great importance, giving a great deal of information and are such as can be done in the office of the general practitioner, who after all does and will treat the majority of the tuberculous in our communities.

In concluding this paper I desire to express my appreciation to Dr. L. Rosenthal, of the Workmen's Circle Sanatorium, for the careful and diligent way he made the blood examinations on the new arrivals to the sanatorium.

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75 CHESTNUT STREET.

CHRONIC INTERSTITIAL NEPHRITIS.

Report of a Case with the Autopsy Findings.

BY S. E. EARP, M. S., M. D.,
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Often many of the pathological lesions in an individual are unrecognized, and if they were known it would not be considered a remarkable circumstance that he died, but rather a surprise that he lived under existing conditions. No one knows so well as the student of the autopsy table how the manifold kindness of Nature permits a person to live with a damaged organ or the absence of one and how perfect are the various means of compensation. An illustrative case to emphasize the facts was presented during my service at the Indianapolis City Hospital. Dr. H. R. Alburger was pathologist and Dr. M. A. Millington house physician.

CASE. T. M. was brought to the hospital February 15, 1912, in a profound comatose condition, hence it was impossible to obtain a history. The pupils were contracted and did not respond to light. All reflexes were diminished. Heart sounds were weak and feeble but there were no perceptible murmurs. There was some hypertrophy. There was dyspnea and the chest seemed to be full of gurgling bronchial râles, but it was impossible to make out any definite pathological condition. There were no masses in the abdomen. The urine was passed involuntarily. Sclerosis of the brachial and radial arteries was pronounced and the diminished calibre gave a full and rapid pulse, which evidently would not have been so except for the cardiac hypertrophy. A diagnosis of uremia was made. It was believed that there was a chronic lesion of the kidney. The patient died three hours after admission.

The post mortem findings as I observed them were as follows: Body of white adult male; skin dry and dirty; apparent age eighty years; rigor mortis well marked and post mortem lividity was slight in dependent parts. There was a tumescent mass in the right inguinal region which was a hernia containing small intestine and omentum. An incision was made in the median line from the larynx to the symphysis pubis and then the viscera of the chest and abdomen were exposed. A fair amount of subcutaneous fat was found and the musculature was medium. Costal cartilages were well calcified. General appearance of abdominal cavity was negative. In pleural cavity adhesions were found, breaking easily from the outer aspect of the lung, but strong at the base. Section of the right lung showed marked pneumonic consolidation, but the central portion gave evidence of gray hepatization around the edges of which was red hepatization. All lobes were involved on the outer surface of the lung; the pleura showed evidence of fibrosis. The left pleural cavity presented the formation of adhesions which were firm at the apex of the lung. This lung had healed areas of tuberculosis, but otherwise was normal. The pericardium was thickened, contained ten c. c. of straw colored fluid, but no adhesions. The heart was larger than normal, both ventricles were dilated, there were arteriosclerotic spots on the mitral valve and "chicken fat and currant jelly" clots inside the heart. There were atheromatous spots noted at the arch of the aorta as well as at the abdominal aorta; this was sclerotic. Along the bodies of the dorsal vertebræ to the right were exostoses projecting one half an inch from bodies. The examination of the appendix and intestinal tract was negative. The right kidney was surrounded with a large amount of fat. The capsule stripped easily. The kidney was arteriosclerotic and there was a chronic interstitial nephritis. The ureter was not distended. The left kidney was larger than normal, and there was found a stone forming a complete mould of the pelvis and calices. The stone was dark gray in color, hard and friable, and surrounding it was a large collection of pus. The ureter was larger than normal, but not distended. Section of liver showed fatty condition. The bladder was ribbed and contained six small stones one half inch in diameter, and a larger one, one and one half inch in diameter, which had projections corresponding to the ones found on the stone which had been moulded by the kidney. These stones may have passed from the kidney, but not evidently at a recent date since the ureter did not seem sufficiently distended. The lateral lobes of the prostate were hypertrophied.

It was conclusive that a right lobar pneumonia, chronic interstitial nephritis, and uremia were sufficient and might divide the responsibility of death, while contributory factors were legion.

24½ KENTUCKY AVENUE.

CONVALESCING CHILDREN.

A Commonly Neglected Phase in Their Treatment.

BY LEGRAND KERR, M. D.,
New York.

The more we study the child the more firmly convinced we become of the fact that moral defects are frequently dependent upon some slight physical fault. No one questions now the more or less marked influence that physical defect has upon the ability properly to educate the child and this is more certainly true of the child's moral education.

It is a very common experience to find that, after a protracted or serious illness, a child who previously was good natured and obedient, becomes self willed and peevish during convalescence and disobedient after it. Much of this is due to the fact that, while the physical needs of such a child may be studied and adequately provided for, there is commonly entire disregard for possible mental and moral needs at this period. Of necessity, the regular régime of the child's life is broken by his illness, but when convalescence is once established

there is a gradual return to the regularities of the child's life unless he rebels too strongly.

The writer is firmly convinced that when convalescence is fully established there should be instituted some scheme of mental and moral training, in harmony with the gradual gain in mere physical strength and keeping pace with it, so that convalescence will mean not only, as it commonly does now, a return to physical well being, but also a restoration of the child's full efficiency, physical, mental, and moral. It is neither wise nor right to emphasize physical efficiency without regard to mental and moral efficiency.

To bring about a normal return to full efficiency means that there should be coupled with the measures used to restore physical efficiency, such instruction, training, and well guided amusement and play as will occupy the child's increasing mental and moral powers in a measure commensurate with its increasing strength.

In the home this can usually be accomplished by the careful parent, if he or she is properly instructed and the child is safeguarded against fatigue. The safest method is to use old toys, old books, and familiar things in both instruction and play, because the new always tends to excite the child, and, as inhibitory control is weakened by illness, no undue excitation is justified.

But it is necessary that some well defined method of directed play or instruction be instituted if there is to be symmetrical development during convalescence.

In institutions, particularly in hospitals that have any considerable number of children as patients, there should be added to the hospital force a trained kindergartner or at least some one who is sufficiently trained to stimulate and guide the increasing powers for mental and moral development. It is just as important to provide thus for the child during convalescence as it is to provide adequate and skilled nursing during acute illness.

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THE NOSE AND THROAT.*

The Constitutional Factors Which Enter into Their Diseases.

By Ernst Danziger, M. D.,
New York.

In discussing the importance of the constitutional factors in diseases of the nose and throat, I shall limit myself to constitutional conditions which are not due to acute infections, such as the acute exanthemata, which are accompanied by local symptoms in the nose and throat; nor shall I discuss the specific lesions of tuberculosis or syphilis, but rather treat of the importance of these diseases on nose and throat conditions by their general influence on the human body.

For the sake of convenience, I shall divide the subject into three parts: 1. Abnormal development of structures; 2, circulatory conditions; 3, neurotic disturbances.

1. The most frequent cause of obstruction to nasal breathing is the overdevelopment of the normal adenoid tissue of the rhinopharynx, not only the adenoid tissue in the pharyngeal vault, but also enlarged palatine tonsils; when they are so enlarged that their upper pole, which is hidden in the soft palate, pushes the same upward and backward, as almost to produce an occlusion between the posterior wall of the pharynx and the posterior margin of the soft palate.

The ablation of the lymphoid tissues in such instance, means only the removal of the result of certain conditions, without removing the cause. In consequence, we do not find, in quite a few instances, the desired relief, and there is speedy recurrence of the removed tissues.

It is perfectly safe in the present state of our knowledge, to assume that the tonsils and the adenoid tissues in the pharynx are not only a barrier to local bacterial invasion, but also represent the outlet for drainage from the mucous membrane of the nose and oral cavity; the more vulnerable to infection the mucous membranes, the more work has to be done by the lymphatic structures of the rhinopharynx. The cause for the hypertrophy of these lymphatic structures is therefore found in the physiological attempt to overcome a pathological condition of the mucous membranes of the nose and buccal cavities.

There are two conditions which cause a congenital low resistance of these mucous membranes to infection, the taint of tuberculosis and syphilis. The type of children encumbered by such an inherited taint is known as the lymphatic or scrofulous. They are not suffering from either tuberculosis or syphilis, but suffer just from that inherited weakness of the mucous membrane.

The general treatment of these children is of more importance than the local. Remove enough of the tonsils and the adenoids, if they cause obstruction or are the cause of local infection, but give your attention to their inherited taint. Outdoor life, proper feeding combined with hydrotherapeutic measures, syrup of iodide of iron and codliver oil, are of more service than surgical means. Try to overcome the intranasal obstruction to breathing, due to congested mucous membranes, by topical applications; silver nitrate alkaline douches, antiseptics may be called for.

It is in the same type of children that you find a tendency to rheumatism, not on account of the increased lymphoid tissue, but on account of the vulnerability of their mucous membranes.

Repeated attacks of epistaxis or bleeding from other places of the nose and throat show also an abnormal state of the mucous membranes, and are often a forerunner of pulmonary hemorrhages, and all such patients should be watched carefully, especially if their family history does not give them a clean bill of health.

Examine the accessory sinus of children where there is chronic purulent nasal discharge with lymphoid hypertrophies, and do not overlook the teeth as a causative factor; both are often the cause of infection, especially in the same type of children.

One of the results of obstructive nasal breathing in early life is the formation of a high palate. When breathing with your mouth closed, you put

*Read before the Harlem Medical Society, February 5, 1913.

your tongue against the hard palate and push the alveolar processes of the superior maxilla forward and sidewise, and so tend to broaden and flatten your palate. When you breathe with the mouth open, you will put your tongue against the lower teeth. The buccal muscles are put on a stretch, and the weight of the tongue helps to increase the traction. Therefore the pressure of the buccal muscles against the alveolar processes of the upper maxilla will tend to increase the height of the palate. In consequence, the space between the palate and cribriform plate of the ethmoid bone is shortened. The septum cannot develop properly and is forced to the side either one way or the other, and we have then to deal with the deviation of the septum. So it becomes at once clear how a constitutional taint can become the underlying cause of bony deformities in the nose.

There are other constitutional causes of the formation of a high palate and septal deviation, as rickets and heredity. There is no doubt that we find in newborn infants abnormally high palates, due to rickets during fetal life, but it is asserted even now that these cases are nearly always of syphilitic origin. It might not be amiss in this connection to tell you why in cases where there is no constitutional weakness, the lymphoid tissues become hypertrophic, and why after their removal the health of the child is improved in so great a measure as we frequently see it. These are the cases when acute infection of the mucous membrane was the causative factor of adenoid hypertrophy. The acute infection subsides, but leaves the adenoid tissues enlarged, either causing mechanical obstruction to breathing or, by pathological adhesions, giving rise to retention of infectious material. In such cases, the ablation of these tissues and removal of the infected focus is all that is necessary to bring about normal conditions, and such a child is cured.

2. The second class of cases to be discussed are the acute and chronic inflammations of the mucous membranes due to metabolic conditions.

In treating frequent colds in children or adults, we shall not go very far astray if we assume that quite a number of these cases are not due to the change of the weather, but to digestive disturbances. Very often a cold attributed to chilling on leaving a hot banquet hall is not due to the sudden change of temperature, but to a gastric or intestinal autointoxication. I have seen other patients with an uncontrollable appetite and little discretion in selecting their food suffer at the slightest provocation from attacks of protracted rhinitis, pharyngitis, or laryngitis. After they reduce their weight, live the simple life, their upper air passages never cause them the slightest annoyance. It seems especially the ingestion of sugar or starches which plays an important part in the production of these conditions. In any case of rhinitis, pharyngitis, or laryngitis, we should not overlook a gastric hyperacidity which will make any attempt at local treatment unsatisfactory, until the condition is cured.

Rheumatism or gout is said to produce a coryza or angina, although I do regard a painful throat as rheumatic only when we have to deal with the rheumatic condition of the muscles of deglutition. I do not believe that rheumatism will cause an inflammation of the mucous membranes.

Rheumatism may attack the larynx and give rise to an immobilization of one of the vocal cords by an inflammation of one of the cricoarytenoid articulations.

Epistaxis is not always a local condition, but sometimes a local expression of a decompensation of the heart or due to a hemic condition accompanying general diseases, as cirrhosis of the liver, leuchemia, hemophilia, rheumatism, or arteriosclerosis.

Diabetes mellitus is an etiological factor in certain nose and throat conditions which should not be overlooked, as they are sometimes the first symptom to arouse the suspicion of the presence of this disease. In such patients you find a decided dryness of the throat, the mucous membranes look beefy and red and are covered with a thick tenacious mucus. Unless you discover the real cause, local measures will be in vain. You see also in this connection the importance of the metabolism of carbohydrates in chronic conditions of the mucous membranes of the upper air passages.

3. The neuroses of the nose are to be divided into vasomotor disturbances or anomalous sensations or paresthesias. I shall not speak of the flow of thin seromucous as we find it in bakers and furriers, due to local irritation from flour dust or chemicals, but shall discuss only conditions which have an organic basis in some other part. We find especially in women cases of watery discharge from the ethmoid region of the nose, sometimes involving the conjunctiva. Local treatments in these cases make no impression. The fact that these patients are all women ought to attract our attention to their generative organs. There is no doubt a reflex connection between the nose and sexual organs. During menstruation the mucous membrane of the nose is congested, and we may have a vicarious menstruation through the nose. Cauterization or operative procedures in the nose hasten menstruation. The same procedures ought to be avoided in pregnant women, as they may cause abortion. Streit has treated dysmenorrhea by cauterization of the lower turbinates and septum with some success.

Hay fever caused by the pollen of golden rod and other plants must have some unknown constitutional basis; attempts at local treatments so far are failures. Surgical attempts to remove adenoids or polyps have been a failure, as they remove the result and not the cause. Dietetic treatment, especially avoidance of starches and sugar, protection of the eyes by smoked glasses, cotton filters in the nostrils, epinephrine or cocaine might be of some help, but so far we are rather in the dark concerning this disagreeable affliction.

Globus hystericus is not always purely hysterical, but, according to Killian, it may be compared to a cardiospasm, the spasm being at the entrance of the gullet in the pharyngeal constrictor muscle. It might be due to some oversensitive area in the hypopharynx or to an enlarged lingual tonsil or some gastric condition.

Spasm of the pharyngeal muscles, sometimes even audible, may be caused by chorea.

There are a number of nervous complaints of such a variety that it is impossible to classify them. Many a uvula has been sacrificed to such perverted sensation. It is surprising to see how nervous patients will improve subjectively without showing the slightest change in their objective condition, demonstrating the influence of the nervous system over the nose and throat, even in organic conditions.

63 West Ninetieth Street.

WHOOPING COUGH.*

Its Treatment with a Vaccine.

By Samuel M. Wilson, M. D.,
Philadelphia.

Pertussis, or whooping cough, known also by several other names, does not appear to have been known to the old Greek and Roman physicians. Our first description is by Baillon, of Paris, who described it, in 1578, as a nervous irritation of the lungs. About a century later, Willis, of Oxford, speaks of "chin cough" as a well known epidemic disease of childhood. The mortality was gradually increasing, perhaps because "from general want of success when treated by the general practitioner this branch of practice had fallen chiefly into the hands of old women and quacks," and it has been considered, for infants less than one year old, the most fatal of the diseases to which they are subject.

For about three hundred years, little progress has been made in the successful treatment of this distressing and alarming affection. Bleeding, vomiting, purging, frightening, etc., by the earlier practitioners, charming with relics of saints, and ministrations by old women and quacks have alike been little less efficacious than the more recent use of antipyretics, expectorants, and sedatives.

The introduction of cowpox virus marked the beginning of the science of biological therapeutics, which at this time is rapidly supplanting our former rather empirical methods of treatment of many diseases, such as diphtheria, pneumonia, typhoid fever, etc.

Bordet and Gengrion began their bacteriological investigations of whooping cough in 1900, and after six years of most careful research have isolated and identified the specific organism which produces it, and I wish to report some results of treatment with a bacterin or vaccine made with these germs.

It is unnecessary for me to describe the disease, as all are well acquainted with it, and with its most prominent characteristic, the distressing effort to dislodge the tenacious mucus, and the noisy inspiration that terminates each paroxysm and gives its popular name, whooping cough, to the disease.

Drugs and devices of every nature have been used to facilitate the removal of this mucus and the consequent lessening of the suffocating "kink." Among unusual ones, it may be mentioned that not many years ago the city gas works were visited by mothers, begging permission to hold suffering children over the ammonia tanks and that ozone, generated by static machines or otherwise, is occasionally tried, as are various other fumes and vapors. Needless to say, no treatment has been thoroughly satisfactory, and parents usually depend on some proprietary expectorant, consulting a physician only if pneumonia or some other serious complication threatens life.

Early in March, 1912, the writer was asked to treat a few cases of whooping cough which had appeared in this city, in a large orphanage containing about five hundred children between four and ten years of age, and of whom at least sixty per cent. show inherited constitutional defects. It has been the established custom of this institution to treat whooping cough with a decoction of chestnut leaves, with apparently as good results as are obtained with more modern remedies. The writer, however, was better acquainted with bromoform, and antipyrin with quinine, and used them for a few days with these children.

Dr. E. E. Graham, on a previous occasion, had kindly furnished me with some pertussis bacterin, of which he was making an investigation, and the result in a few cases had been so satisfactory that I tried to procure some more, but owing to the fact that it was not on sale, and that Doctor Graham had none remaining, there was some delay. Consequently, in two cases developed extensive conjunctival ecchymoses, and in one of these nosebleed also several times daily.

These cases showed no improvement under drug treatment, and the disease developed in several more children, who were brought to a separate building on the grounds of the institution, used as an isolation ward, and in which the treatment was carried out. An attempt was made to record the number of "kinks" passed through, by having each child deposit a bean in a bottle marked with his name. This might have been successful had natural emulation for a high record not led the patients to record every little cough, and, afterward, a natural dislike of hypodermic needles led them into a modest forgetfulness. In spite of the failure of our system of recording "kinks," the improvement was easily seen.

As soon as the pertussis vaccine could be obtained, every child who was not in the beginning stage of the disease, was given forty million killed organisms. After the second injection, given forty-eight hours later, the discolorations began to fade in the two children previously mentioned, and the nosebleeding ceased as the paroxysms diminished in frequency and in severity. The characteristic whoop subsided, and the cases soon became, clinically, simple cases of bronchitis.

This was the history of twenty-four cases, excepting that in two bronchopneumonia developed, but the patients recovered. One case of phthisis florida was, at first, mistaken for whooping cough, or perhaps was excited from latency into violence by the latter. In every case seen during the early stage of the whooping, one flask of pertussin, representing twenty million killed bacteria, was administered. In those few for whom this could not at first be procured, the dose was larger, forty million, but the subsequent doses depended on the temperature range and the severity of the cough. By

*Read, January 6, 1913, before the Philadelphia Clinical Association.

this, I mean that if a child had a daily temperature range of two or more degrees, with a rigor and free diaphoresis after injection, his second dose was not larger than the first. If this reaction occurred a second time, the third dose was no larger, but as soon as the range fell to one degree or less, the dose of vaccine was increased to double, triple, or more.

In some cases the reaction was always feeble, and in these the improvement was likewise, as a rule, less striking, but nevertheless evident. In several of the cases a good reaction appeared after a combined injection of cacodylate of sodium, gramme 0.03 or even 0.025, with twenty or thirty million bacteria when it failed without the cacodylate. Many of these children showed tuberculous stigmata, many syphilis, or a combination of these.

In the first series of thirteen cases, a mistake was made by continuing the vaccine after the whooping had stopped, and no reaction had followed the injection of sixty or eighty million bacteria. Such children improved, to be sure, but in all probability the injection ceased to do much good after the spasmodic stage was passed.

In the second series of eleven cases a different plan was adopted. As soon as the spasmodic element appeared to be overcome by the bacterin, its use was stopped and not resumed unless a whoop or a cough in severity approaching a whoop was noted. In one or two instances this took place.

So far as treatment of the second stage is concerned, cacodylate of sodium, solution of calcium iodide, guaiacol, and oil of eucalyptus all acted well.

As previously stated, however, my intention was to bring to your notice the fact that the most distressing symptom of this disorder yields rapidly to a specific vaccine, and leaves merely a catarrhal condition, for which all of us know and use efficient remedies.

Among these twenty-four cases, the shortest duration of treatment was nine days, the longest forty-eight, and the average twenty-three. The "kink" disappeared on an average, one week sooner. Taking into consideration that this means that it was thought safe, at the expiration of the time stated, to return them to their classes, and that this judgment was confirmed by the failure to infect any more children in an assemblage of nearly five hundred, we feel that our results justify the use of the remedy in future.

Previous outbreaks had occurred in the institution, and the duration had then been much longer and the percentage infected much greater, as the isolation ward was not yet built.

I desire here to express my gratitude to Doctor Voight for having furnished the pertussis vaccine used, and to my colleagues, Dr. Joseph Lopez and Dr. Frederick Eft, for their kind assistance.

CONCLUSIONS.

1. The organism isolated by Bordet appears, clinically, to take a specific part in this disease.

2. A bacterin made with it rapidly controls the "kink."

3. The improvement is somewhat proportional to the systemic reaction, and when this is very feeble, it should be excited by some such remedy as cacodylate of sodium.

4. The specific element appears to vanish with the "kink," the case shortly after losing its infectiousness, and no longer calling for specific treatment.

1517 ARCH STREET.

THE BLOOD CATALASE IN MALIGNANT TUMORS.*

BY G. L. ROHDENBURG, M. D.,
New York.

Many investigators have shown that in cases of malignant tumor the proteolytic activity of the blood enzymes is diminished. Not as much work has been done with the blood catalase. The method adopted in these experiments is old in principle, though the exact technic is perhaps new. The apparatus used (Fig. 1) is a modified gas burette. It consists of two chambers of slightly different calibre, connected by a U tube. The A arm of the apparatus is filled to the twenty c. c. mark with hydrogen peroxide rendered faintly alkaline by the addition of decinormal sodium hydrate. The B arm is filled to the zero mark with tap water. At the outlet E a bent overflow tube is inserted through a tightly fitting rubber cork and a beaker placed under it to catch the drip. The blood to be examined is collected as for a blood count. A white cell pipette is filled with blood up to the first graduation beyond the tip and distilled water added to the 1.1 mark. The pipette is then placed in outlet D, the mixture rapidly blown out, and the opening closed with a tightly fitting rubber cork. Within a few seconds there is a liberation of oxygen, which passes over to chamber B and depresses the level of the tap water in this arm. At the end of five minutes a reading is taken on arm B, this arm being graduated in cubic centimetres. A red cell count is then made, and what has arbitrarily been termed the catalase index is determined.

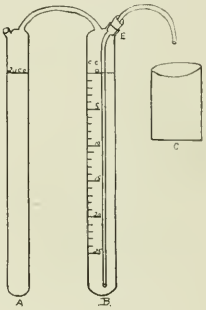

FIG. 1.—Modified gas burette.

Among other things, the amount of enzyme action occurring in a given period depends upon the amount of enzyme present. It is obvious that some standard must be adopted in comparing different readings. We will suppose that in a given specimen the reading is six c. c. and that the red cell count is 5,000,000. It has been demonstrated that while some catalase is found in the white blood cells, the major portion is present in the red cells, the blood serum containing none (1). It is necessary,

*The clinical work was done in part at St. Luke's and the German Hospitals, New York. For clinical material I am indebted to Dr. Francis C. Wood, Dr. O. G. T. Kiliani, and Dr. Franz Torek. For assistance in the experiments I am indebted to Doctor Mount and Doctor Petersen.

therefore, to compare the catalytic activity of a given number of red cells. For that reason we have arbitrarily adopted a standard of 100,000. It will be recalled that but one graduation on the white cell pipette was filled with blood. The measurements of fifty white cell pipettes taken at random gave a capacity of 0.3 c. mm. for each graduation. The reading six, therefore, indicates that the number of red cells in 0.3 c. mm. liberated six c. c. of oxygen in five minutes. In this instance that number is 1,500,000, or fifteen times 100,000. The reading in cubic centimetres is divided by fifteen, and the decimal so obtained has been termed the catalase index. If larger amounts of blood are taken up in the white cell pipette, proper allowance must be made in determining the catalese index.

The possible sources of error in the test are several; but most of them are personal equations, and a standard having been adopted by examination of a series of normal specimens of blood, they can be disregarded. The most important controllable source of error is found in the temperature of the hydrogen peroxide. This reagent is usually kept in the ice box, and if it is used before it is warmed to room temperature, all of the readings will be low.

Winternitz (2) and his coworkers, who have done extensive work with the blood catalase in pathological conditions, have concluded that the catalytic activity of supposedly normal blood is, for the given individual, constant over long periods. It may vary, however, considerably in different supposedly normal individuals. Our preliminary experiments in determining the normal catalase index confirm these conclusions. While in the first of our experiments the test was repeated three times with each blood specimen, the variations noted were so slight that in subsequent tests but one reading was made. We have considered as normal any index between 0.27 and 0.47.

The normal catalase index having been determined, the blood in thirty-one patients suffering from a group of miscellaneous diseases was examined to note the diagnostic value of the reaction. The data are presented in table 1. In tuberculosis the index was normal in one instance and depressed in one. In three cases of pneumonia the index was normal in two and markedly depressed in the third (the blood from the depressed case was taken two hours ante mortem). In pulmonary conditions associated with nephritis it was markedly depressed. No change from the normal index was noted in a case of simple pleurisy with effusion, but a marked elevation occurred in a case of bronchiectasis. In five cases of typhoid fever the index was normal except in one instance. Empyema of the gallbladder, syphilis, enteroptosis, and erythromyalgia showed no change from the normal in the one case of each examined. The same was true of true cases of uncomplicated endocarditis, two cases of pernicious anemia, one case of arthritis deformans, and one case of x ray dermatitis. In two cases of acute articular rheumatism, and in two cases of cerebral arteriosclerosis without kidney involvement, the index was markedly elevated. In two cases of nephritis and in one case of hepatic cirrhosis complicated by nephritis the index was markedly depressed.

TABLE I.

Sex	Age	Diagnosis	C. c. of O liberated	Red cell count	Index
F	38	tuberculosis	5	4,320,000	.38
M	17	tuberculosis	2	3,180,000	.21
F	45	pneumonia	5	3,840,000	.43
F	7 mos.	pneumonia	2	4,360,000	.15
M	49	pneumonia	4	4,830,000	.27
M	62	bronchiectasis	10	4,560,000	.73
M	34	asthma and nephritis	2	3,960,000	.16
M	51	pleural effusion with nephritis	2	4,120,000	.15
M	20	pleural effusion	5	3,500,000	.47
F	40	syphilis	4	3,100,000	.44
F	30	typhoid	4	3,520,000	.38
F	42	typhoid	4	3,580,000	.34
F	22	typhoid	3	4,080,000	.25
M	32	typhoid	2	3,760,000	.18
M	25	typhoid	4	4,960,000	.27
F	34	empyema gallbladder	3	3,480,000	.27
F	34	enteroptosis	4	3,200,000	.40
F	35	erythromyalgia	5	4,840,000	.36
F	30	pernicious anemia	1.25	1,160,000	.34
F	42	pernicious anemia	2	1,880,000	.35
F	62	arteriosclerosis	7	4,210,000	.55
M	66	arteriosclerosis	9	3,760,000	.87
M	56	x ray dermatitis	7.5	5,560,000	.45
M	59	acute rheumatism	8	3,840,000	.69
F	30	acute rheumatism	7	4,490,000	.48
F	55	arthritis deformans	4	4,760,000	.28
M	55	endocarditis	4	3,880,000	.34
M	36	endocarditis	4	4,460,000	.27
F	27	uremia	2.5	4,220,000	.19
F	39	chronic nephritis, interstitial	1	3,520,000	.09
M	46	hepatic cirrhosis with nephritis	2	4,300,000	.15

A series of sixty-seven cases of malignant tumor formation were next examined. According to the catalase index the cases fall into one of three divisions, for the index may be either raised, normal, or depressed. Those cases in which the index was high were cases in which an early diagnosis was possible because of clinical features which are self evident. The data of this group are given in table 2.

TABLE II.

Sex	Age	Diagnosis	C. c. of O	Red cell count	Index
F	39	Hydatidiform mole, chorioepithelioma fourth month of pregnancy	8	4,200,000	.63
M	51	Epithelioma of nose three eighths inch in diameter. Noted four months. Physician	9	4,600,000	.65
F	29	Carcinoma of breast eight weeks after trauma	9	4,000,000	.65
F	56	Epithelioma of cervix uteri. Examined four months previous and cervix found normal	8	3,800,000	.70
M	42	Melanosarcoma of uveal tract. Tumor three eighths inch in diameter. Early operation because of acute glaucoma	9.5	4,200,000	.75
M	42	Epithelioma of glans penis four months' duration	8	4,800,000	.55

Twenty-eight cases, in all of which the tumors can roughly be described as operable though much further advanced than those of group one, showed no change in the catalase index. The data are presented in table 3.

TABLE III.

Sex	Age	Diagnosis	C. c. of O	Red cell count	Index
M	45	Epithelioma at anus	4	4,300,000	.30
M	52	Epithelioma of cheek	5	4,650,000	.36
M	47	Epithelioma of cheek	4.5	4,700,000	.31
M	39	Carcinoma of tongue	3.5	3,500,000	.30
F	54	Carcinoma of tongue	4	4,000,000	.33
M	60	Carcinoma of tongue	3.5	3,900,000	.29
F	47	Carcinoma of esophagus	3	3,000,000	.33
M	52	Carcinoma of esophagus	3.5	3,200,000	.36

Sex	Age	Diagnosis	C. c. of O	Red cell count	Index
M	48	Carcinoma of stomach	3	2,800,000	.35
M	47	Carcinoma of stomach	4	3,900,000	.34
M	54	Carcinoma of stomach	3.5	4,000,000	.29
M	65	Carcinoma of stomach	4.5	4,800,000	.31
F	50	Carcinoma of stomach	3.5	4,000,000	.27
M	35	Carcinoma of colon	4	4,200,000	.31
M	50	Carcinoma of colon	4.5	4,900,000	.29
F	47	Carcinoma of colon	4	4,350,000	.30
F	8	Sarcoma of humerus	3.5	4,000,000	.27
M	34	Sarcoma of femur	3.5	3,840,000	.30
M	25	Sarcoma of testes	3	3,230,000	.29
F	39	Carcinoma of uterus	4	4,200,000	.31
F	40	Carcinoma of uterus	3.5	3,800,000	.31
F	44	Carcinoma of uterus	3	3,200,000	.31
F	40	Carcinoma of breast	4	4,400,000	.29
F	39	Carcinoma of breast	3.5	3,400,000	.31
F	51	Carcinoma of breast	4	3,970,000	.33
F	47	Carcinoma of breast	4.5	4,700,000	.31
F	39	Carcinoma of breast	3.5	4,200,000	.27
M	65	Carcinoma of prostate	4	3,850,000	.34

Thirty-three cases, some of which were operable, others not, showed a depressed catalase index. Some of these cases also showed albumin and casts in the urine indicating a probable nephritis. The data are presented in table 4.

TABLE IV.

Sex	Age	Diagnosis	C. c. of O	Red cells	Index
M	46	Carcinoma of esophagus	2	4,980,000	.13
M	61	Carcinoma of stomach	1.5	3,880,000	.12
F	62	Recurrent rodent ulcer	2.5	4,880,000	.17
M	60	*Carcinoma of stomach	.5	2,360,000	.07
F	65	*Carcinoma of colon	1	3,880,000	.08
F	66	Carcinoma of colon	1	3,680,000	.09
F	61	Carcinoma of stomach	1.5	3,880,000	.12
F	61	*Carcinoma of gall-bladder	1	3,000,000	.11
M	31	Sarcoma of inguinal glands	2	4,560,000	.14
M	50	Carcinoma of tongue	1.5	3,200,000	.15
M	47	Carcinoma of tongue	2	3,000,000	.22
M	45	Carcinoma of stomach	1	3,200,000	.10
M	65	Carcinoma of stomach	1	3,500,000	.09
M	59	Carcinoma of stomach	2	3,800,000	.17
F	54	Carcinoma of breast	2	3,600,000	.18
F	49	Carcinoma of breast	1.5	3,500,000	.14
F	61	Carcinoma of breast	1	3,200,000	.10
F	39	*Carcinoma of breast	1	4,000,000	.08
F	45	Carcinoma of breast	1.5	3,980,000	.12
F	52	Carcinoma of uterus	1.5	2,000,000	.25
F	49	Carcinoma of uterus	1	3,780,000	.08
F	47	*Carcinoma of uterus	1	3,240,000	.10
F	49	*Epithelioma of cervix uteri	2	4,200,000	.16
F	54	Epithelioma of cervix uteri	1.5	4,000,000	.12
F	54	Epithelioma of cervix uteri	1	3,600,000	.09
M	50	*Carcinoma of kidney	1	3,800,000	.08
M	54	Carcinoma of pancreas	.5	3,200,000	.05
M	52	*Carcinoma of prostate	1	3,400,000	.09
M	58	*Carcinoma of prostate	1.5	3,880,000	.12
M	73	Carcinoma of prostate	2	4,200,000	.15
F	45	Rodent ulcer	2	4,000,000	.15
M	35	*Recurrent sarcoma of femur	1	3,900,000	.08
M	55	*Carcinoma of gall-bladder	5	3,200,000	.05

It is not probable, judging from the variations noted, that the determination of catalase activity is of any diagnostic value in cases of malignant tumor. A high catalase activity, such as has been noted, occurs in conditions other than malignant tumors. Winternitz noted its occurrence in peritonitis, and it occurred in the cases of acute articular rheumatism, bronchiectasis, and cerebral arteriosclerosis, as shown in table 1. A normal index is obviously of little value; a depressed index occurs in other conditions, notably nephritis.

The exact significance of the inhibition of enzyme activity, both proteolytic and catalytic, is far from clear; it is not a change distinctive of cancer alone. That inhibition is due to the formation of antibodies is at the present not proved.

*Indicates albumin and casts present in the urine at the time of examination of the blood.

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222 WEST 136TH STREET.

INSTRUCTION IN SEX HYGIENE.*

A Parent's Problem.

BY MARY SUTTON MACY, M. D.,
New York.

Fifty years ago, perhaps even twenty-five years ago, the parents who desired to instruct their growing children in subjects of sex were so few as to be almost an unheard of phenomenon. To-day the parents who wish so to guard their little ones are legion and they are incessantly putting to the doctors the questions, "What shall I tell?" "When shall I tell it?" and "How am I going to?" It is my purpose, to-night, to offer a few suggestions in answer to these questions, though I might summarize the answers thus. 1, What shall I tell? The truth. 2, When shall I tell it? Always as soon as the child shows any curiosity or interest, perhaps first at two years of age, perhaps not till five or six, and from then on till maturity. 3, How am I going to? Simply, sincerely, earnestly, and as a matter of course.

Let us consider these answers more carefully. You will say to me, "It is easy for you to say 'tell the truth,' but what is the truth and how much of the truth can I tell, or my child understand?" I am sorry that I have not time to go into all the details with you, but I can give you the names of some books which will instruct you in the detailed facts to be given, and I can give you a general statement of what truth must be told. The best of the books that I know are The Mystery of Life Series, written by Dr. Isabelle Thompson Smart; but there is a whole host of books—good, bad, and indifferent—which could be listed for you by any librarian, and from which you might get information and suggestions. I have limited my suggestion, because I know Doctor Smart's books are scientifically accurate and helpfully suggestive. The truth which you must tell consists in facts about the birth, the growth, and the functions of the whole body. Here and now let me emphasize the necessity of instructing children in the functions of the whole body, avoid overemphasis on sex, on digestion, on muscular activity, on circulation, or on the nervous or mental processes, and above everything avoid suggesting sex abnormalities, indigestion, laziness or overfatigue, heart disease, or morbid, nervous, or mental processes. More of this later; let me return to the truth you should tell. Every fact you give the child should be constructive, not destructive; hopeful, not discouraging; wholesome, not morbid; positive, not negative; and every fact you give must be adapted to the child's age, past mental experience, and present mental capacity. Common sense will tell any one that the amount of truth to be told

*Read before the Public Health Educational Committee of the American Medical Association, at Yonkers, N. Y., February 17, 1913.

to the two year old and to the fifteen year old is different; but I wish to emphasize that it is only the quantity and not the quality of truth which should differ.

Thus we have come to the second question, "When shall I tell it?" and the answer "always." To the baby's lisping question, "Where did baby come from?" do not lie. The fairy tales of stork or market basket, waterspout, milk bottle, or ash can may be pretty symbols or humorous, teasing replies, but they are all harmful, and every one is liable to be found out sooner or later by the child and mercilessly judged in its true light as a lie, and once your child's confidence in your truthfulness is shaken, your control is lost and your power to influence the future life is forfeited.

The baby will be content usually with the answer, "From a seed, just as a flower comes from a seed," or "From an egg, as the birdie comes from an egg," according to the child's familiarity with flowers or with birds. The habit of "sleepy time tales" or "twilight talks" with your little ones has its value here, because long before the child has arrived at the age to ask, "Where does baby come from?" you can have taught facts about the flower's seed and the bird's egg. Nature stories may be deftly interspersed with real and favorite fairy tales which the children crave for, and Nature stories can be begun in the old, old way, "Once upon a time." I am too devoted to Peter Pan and Snow White myself to desire to take the fairy tale out of the baby's life, all I ask is that you answer truthfully the child's earnest questions about life. The little one understands that a fairy tale is only make believe, but he cannot understand that Mother or Father is "making believe" when he asks earnestly for information and receives a false reply. The twilight talks have another good purpose if they are wisely guided; they serve to soothe the excited child, to relax the muscles, to quiet the fears, and to prepare the little body and mind to relax in peaceful sleep. To accomplish this the talks must not be ghostly, nor fearsome, nor in any way calculated to inspire terror or dread, and Nature stories can serve in the desired manner, at the same time giving food for thought and laying foundations for future information of vital and definite kind. The habit of twilight talks established in babyhood is easily continued in later childhood years, and it is an easy and simple transition which makes it possible to incorporate in these hours, as the child grows older, tales and statements of facts which will answer questions asked or forming in the child's mind. Then, too, if during the day your little one asks for information you cannot give, because of ignorance or embarrassment difficult to overcome at the moment of asking, you can put off the question temporarily by the promise, "We'll take that up in our twilight hour to-morrow," or "day after to-morrow," according to what you may have already promised for the twilight hours, and according to the time you need to get the information necessary. Please let me sound a warning: Keep your word; do not put the child off with such a promise, and then forget or neglect to answer. Seek the information you need in the time you give yourself, or find out how to overcome your own embarrassment, as the case may be; but be prepared to answer questions when your child asks them, or promise at some definite time and then make good!

So we come to the third problem: "How to tell it." If you adopt the time of telling that I have suggested, that is the twilight hour, or "sleepy time tale," your problem of how to tell things will be much simplified, since with the littlest ones the familiar "Once upon a time" will introduce to them any simple little tale, and it is easy to continue "there was a little boy" or "a little girl who wanted to know certain things." Clothing your information in simple language which the child can understand, leading the little mind along the path of knowledge from things which are known to it to the new, or as the scientific expression is, "from known to unknown" is the royal road to knowledge. One important thing to bear in mind in learning "how to tell" is not to tell too much. It is as dangerous to gorge the baby's mind with information as to gorge the little stomach with sweets, and the mental indigestion which is sure to follow "telling too much" is as hard to treat—yes, harder—as the physical indigestion from the sweets. Answer the little one's question truthfully, simply, but do not use the opportunity to dilate on allied topics, or to spread a feast of information before the eager mind. If you answer only the question asked, you will speedily be rewarded by more questions, until the curiosity is satisfied, and you will leave room for later experiences to develop a normal curiosity at a normal time in the future, and in a normal way. If you overanswer the question asked, you will stop questions for the time. That is, you will stop the child's questioning you, but start up a process of subjective, morbid questioning which will result in unwholesome mental habits and evil effects. If you underanswer the question asked you will be deluged with counter questions until you learn how to answer sufficiently in simple selfdefense. If you fail or refuse to answer the question, some one will answer it for you, and probably in a way you would not desire. Therefore it is the part of wisdom to do yourself that which you would have well done. For the older child more detailed information is needed, and pictures, manikins, models, and such aids to instruction can be used to advantage. For this you will do well to prepare yourself beforehand by seeking personal instruction until you have mastered the practical details and knowledge, after which you will not find it hard to teach the child a little at a time when occasion serves.

All that I have said thus far applies to other truths than those of sex hygiene with equal power, but now I wish to say a few words of warning which apply most forcefully to instruction in sex. First and most important: Do not overemphasize it. Within the last decade and a half sex hygiene has come so prominently before the public mind—the adult mind—that we are in danger of making it too prominent to the child's mind. The pendulum has swung so far from the policy of telling the child nothing that we are in jeopardy of telling him too much. The child is entitled to sufficient information about the function of sex to save himself from the dangers and pitfalls of neglect and abuse, just as he is entitled to sufficient information on the sub-

ject of the digestive function to save himself from dyspepsia and other pitfalls of the kind, and sex and stomach should loom equally large in his horizon and no larger than muscle, or nerves, or mind in the abstract.

Secondly, in way of warning, avoid prohibitive "don'ts" in teaching the child of sex. To tell a little child—for example—not to masturbate is a most excellent way of leading him to experiment, for the purpose of finding out the reason for the "don't." Negative suggestion of this character is fruitful of much danger. Effective substitution of interest alone is the best and simplest way of arresting bad habits and of preventing their formation. Give the child other things to do with his hands, other games to play, other means of amusement than those involving the bad habit forming or formed. Constant care and watching will be necessary, if the habits are formed, and possibly change of environment to break up unwholesome companionships may be necessary; but avoid the "don't do that," and substitute the "do this" or "try this" in order to gain your end.

Third: In your instruction of the young child in sex matters avoid reference to the abnormal so long and so far as possible. If the child's personal observation results in questions concerning abnormalities, treat the immediate subject as you would a disease and let the child understand that such things exist as disease does, because of error in habit or in living, but do not be detailed in your information unless it cannot be avoided, and make your facts constructive in their trend. In all this instruction it is well to have as your motto:

Look up, not down; look out, not in;
And lend a hand!

Probably no living creature is more susceptible to suggestion than a little child, and it is frequently forgotten that the actions and objects of the child's environment, as well as the spoken "do's" and "don'ts" are as pregnant of possibilities for good and for evil. For this reason it is doubly important that the parents have a keen and constant oversight of the companions, caretakers, associates, and objects which surround their child. You cannot hope to keep from the little one all you would not desire him to know, but if you gain and retain the confidence you may so use even the undesirable but unpreventable facts and happenings of his environment that they may be positively useful and not detrimental in forming his character.

The price of wholesome minded, healthy children is good principles and eternal vigilance.

101 West Eightieth Street.

BERIBERI.

A South American Aspect of the Disease.

By Stanley B. Doyle, M. D.,
New York.

Beriberi, although always spoken of as a disease of the coast of China and seldom mentioned as being found in this country, except casually, is extremely prevalent along the west coast of South America, from the Amazon river in the north to the Rio de la Plata in the south. The Amazon river, although explored to its source, is not navigable, except for a few hundred miles from its mouth, and therefore has not been a place for study by the physician.

The Department of Tropical Disease of Tulane University intends, with the help of the government, to investigate the tropical fevers, of which little is known, except the symptoms and possible chance for cure. Pathological investigation will, I hope, bring out some of the puzzling features of some of these tropical diseases which are puzzling only because it is impossible for the lone physician to carry out the laboratory investigations that are necessary to bring out a clear cut picture of the disease.

Beriberi or a similar disorder has been described in this country as found among the New England fishermen who frequent the Grand Banks of Newfoundland and also among the sailors in the gulf ports of Alabama, but as it is well known that the seafaring class of men always try to go south in the winter and north in the summer, it is extremely probable that the cases that are described so far north as the Grand Banks had probably been to some South American or other tropical port some months previous, carrying with them from the tropics the infection that is so slow in developing.

The etiology of beriberi is as yet undecided, two main views prevailing: 1. It is an acute infection; 2, it is a toxemia due to food, with a polyneuritis due to inanition.

It seems extremely probable that the true cause of the disease is a vegetable organism which is most commonly found in rice, fish, or water. The rice, whether polished or unpolished, seems to contain the organism, but the unpolished rice to a less extent than the polished.

Among some of the important factors are overcrowding, as in asylums, jails, ships, and in the rainy seasons with exposure to the wet. Some authorities state that Europeans are comparatively free from beriberi, but this is not so, as in my experience Europeans are attacked in the same degree as the native, providing they are both on the same diet, namely, fish and rice.

The disease itself is probably not directly contagious as far as I have observed, but as the period of incubation varies from about one to three months, cases are lost track of, and as any one who was in a beriberi district while the disease was raging, would be lost sight of by the investigating physician, if attacked by beriberi some months afterward in another part of the country, he would be reported as presenting an isolated case.

The disease is divided into four stages that are easily recognized, except the incomplete or rudimentary form which may be confounded with the prodromal symptoms of any infectious disease.

1. *Incomplete or rudimentary form.* The symptoms to be noticed in this stage of the disease are a period of constipation extending over some ten days and followed by gastric disturbances, such as loss of appetite, vomiting, and pain, at first only over the gastric area, but later becoming a girdle pain not unlike that of tabes. These symptoms usher in all the other forms. When the rudimentary form is of long duration it is accompanied by paresthesia and weakness of the lower extremities.

2. *Acute pernicious or cardiac form.* Following the symptoms of the rudimentary form, the pain extends over the precordia; palpitation, dyspnea, and pain become more intense, and the patient is threatened with cardiac failure. While in this stage the patient either dies if prompt treatment is not instituted or passes into the atrophic stage of the disease, with or without the intervention of the dropsical stage.

3. *Dropsical or wet form.* The dropsical form is marked by an edema which extends over the whole subcutaneous tissue, with effusions into the serous sacs. The atrophy and disturbances of sensation are not so marked in this form, as they are masked by edema, while the dyspnea, cardiac symptoms, and gastric disturbances continue. As the edema clears up, the atrophy becomes apparent.

4. *Atrophic form.* In the atrophic form the wasting is very marked and accompanied by paresthesia, pain, and weakness, usually of the lower extremities, but at times reaching to the arms and neck, which in some cases become so severe that the patient is unable to move his limbs. The pain on pressure over the muscles is slight, but becomes agonizing when pressure is exerted over the nerve trunks, especially over those of the lower extremity. Cardiac palpitation and edema are of little importance in this form, although they are sometimes found to a slight extent.

PATHOLOGICAL FINDINGS.

The urine throughout the disease is free from albumin, except in the latter part of the disease; if elimination is being pushed by diuretics there may be a slight trace of albumin. The color of the urine is light amber, except when fever is present, which is seldom; then it is a typical fever urine. The blood shows a pronounced secondary anemia, which would account for some of the cardiac symptoms, while the degenerative inflammation of not only the peripheral but also of the pneumogastric and phrenic nerves accounts for the remaining cardiac symptoms and the dyspnea.

PROGNOSIS.

The mortality of this disease is given by various authorities as from two to fifty per cent.; but as many of the cases go undiagnosticated, the mortality is probably nearer the lower figure. Cases diagnosticated early and receiving prompt attention almost immediately end in recovery.

DIAGNOSIS.

The diagnosis is easy where a polyneuritis is associated with an edema and the case is in the tropics. The diagnosis of the various forms is comparatively easy for any one who has had experience with this disease.

TREATMENT.

Numerous forms of treatment have been described by the various authors, but none of these seems to answer, as each stage must be treated independently. There is no chance of aborting the disease as would seem possible in an affection of this sort. The rudimentary form of this disease calls for free cartharsis and the cardiac form for digitalis. In the cardiac form I have found infusion of digitalis to have the best effect, as its action as a diuretic will aid in keeping down the edema along with sustaining the heart. Magnesium sulphate gives the best results as a cathartic. Later on in the disease strychnine and massage will complete the cure. A milk diet throughout the course of the disease is advisable, and later getting out of the country where the disease is epidemic, as recurrences are frequent.

CASE I. F. H., aged thirty-five years, came to me at Rio de Janeiro, Brazil, suffering from what seemed to be chronic constipation. He later had gastric disturbances and pain over the precordium. After free cartharsis the patient went back to work, but returned three days later and showed signs of edema and polyneuritis. The treatment was with infusion of digitalis and magnesium sulphate. Later, as edema cleared up, with some stimulation and massage the patient completely recovered. Atrophy was not marked.

CASE II. A. B., aged twenty-four years; when I first saw him he had been sick for six days. He had not resided in a beriberi district, but had eaten rice three or four times a week and some fresh fish. There was a sudden onset with cardiac pains and dyspnea, paresthesia and weakness in the lower extremities, pain on pressure over all nerve trunks, marked atrophy of all muscles, especially those of the calves of the legs; no edema. The treatment was strychnine, iodide of potassium, and massage, and resulted in an apparent cure. One month later I saw this patient and he was undergoing a second attack, which, however, was not as severe as the first and readily responded to treatment.

725 MADISON STREET, BROOKLYN.

Therapeutic Notes.

An Antigalactagogue Preparation.—Hodgkinson, in the *Australasian Medical Gazette* for September 14, 1912, reports his experience with potassium iodide in cases in which it is necessary to check the secretion of milk. He found, upon administering the remedy in about three hundred cases, that one dose usually sufficed to arrest completely the mammary function. Any discomfort present disappeared, as a rule, in five or six hours. The preparation generally administered was:

℞ Potassii iodidi, ... gr. xxx-xl (2 to 2.6 grammes);
Antipyrinæ, ... gr. x (0.6 gramme);
Spiritus ammoniæ aromatici, ... ʒss (2 c. c.);
Syrupi, ... ʒi (30 c. c.);
Aquæ, q. s. ad . . . . . ℥ii (60 c. c.).
M. ft. solutio.

This is given in one dose as soon as the breasts swell and become painful, and may be repeated in twenty-four or forty-eight hours, if required. The amount of iodine given is varied according to the patient's general condition. The treatment is advantageous in that it dispenses with the necessity of dietary restrictions, massage and bandaging, belladonna plasters, etc.

A Styptic Dressing for the Nasal Mucous Membrane.—Pischel, at a meeting of the Laryngorrhinological Society of Vienna (*Revue de thérapeutique médico-chirurgicale*, September 15, 1912), stated that after intranasal operations, in order to avoid plugging the cavities, which is so badly borne by certain patients, he proceeded as follows: Epinephrine is first applied to the open area, and if the bleeding is not arrested, the surface is cauterized, either with the galvanocautery or chromic acid.

It is next painted with tincture of benzoin, a ring of cotton placed around it, and collodion then allowed to fall on it drop by drop. An assistant meanwhile accelerates the drying of the collodion by blowing in a current of air, either cool or warmed. After four to six days, cocaine is applied and the covering of collodion removed.

Use of Pituitary Extract in Labor.—Aubert, in *Revue médicale de la Suisse romande* for November, 1912, reports that in a series of 355 labors, pituitary extract was used forty-two times, or in twelve per cent. of the cases. The drug was almost always given in the second stage, weakness or arrest of the pains being taken as the indications for its use. In thirty-seven cases, one c. c. of the twenty per cent. solution proved sufficient, in four cases, two injections were administered, and in the remaining case four injections were without effect, forceps being subsequently used. The action of pituitary extract generally begins five or ten minutes after injection, the uterine contractions becoming more frequent, powerful, and prolonged. The number of forceps interventions was lessened since the use of the drug had been taken up.

Care of Skin of Face in Children.—G. Norman Meachen, discussing this subject in the *American Journal of Dermatology* for October, 1912, remarks that in spite of care in the daily toilet, a child's face will often show signs of roughness, if not an incipient eczematous inflammation. The promiscuous use of glycerin upon the face is not to be recommended, as its hygroscopic effect may here be too pronounced. Neither is it safe to employ any ordinary white face cream, as a few of these contain lead salts. A preparation which the author considers useful is as follows:

℞ Cetacei, ... } .....āā grs. xlv (3 grammes);
Ceræ albæ, ... }
Aquæ rosæ, ...ʒvi (24 grammes);
Olei rosæ, ...gtt. ii;
Olei amygdalæ expressi, ...ʒi (30 grammes).
M. fiat cremor.

This cream is best employed at bedtime after the face has been washed and dried. It is gently worked into the skin with a fine towel.

For the painful cracks in the mucous membrane of the lips, appearang spontaneously as the result of the habit of biting the lips from nervousness or anemia, the following simple salve is useful:

℞ Adipis lanæ, ...ʒiii (12 grammes);
Olei olivæ, ...♏xx (1.25 grammes);
Carmine, ...q. s.
M. ft. unguentum.

Paraldehyde Intravenously. — Noel and Souttar, in the *Lancet* for September 21, 1912, report highly favorable results obtained by the use of paraldehyde intravenously as a hypnotic or anesthetic for minor operations. The hypnotic effect is exceedingly rapid and altogether devoid of unsatisfactory circumstances. The authors mix from five to fifteen c. c. of paraldehyde with an equal amount of ether and dissolve the mixture in 150 c. c. of a cold one per cent. solution of sodium chloride in sterile distilled water free from dead bacteria, or in default of this, in boiled tap water. The solution is placed in a sterile bottle with a rubber stopple through which pass two glass tubes, and is driven into the vein by means of attached bellows.

By this method of administration the unpleasant taste and preliminary exciting effect of paraldehyde taken by mouth are avoided. In thirty seconds consciousness begins to disappear, in forty it is lost, and in ninety the corneal reflex is absent and anesthesia is complete. Up to this point about from five to ten c. c. of paraldehyde will have been given, and small operations, such as removing teeth or suturing wounds, may be performed With a small dose (five c. c.) the patient passes through a short period of anesthesia into an easy and natural sleep, from which he awakes later without any aftereffects. The most striking results were seen in alcoholics, acute and chronic. Thus, a laborer with a scalp wound and incipient alcoholic dementia was put to sleep in forty seconds and the wound sutured without disturbance.

The measure was also carried out for its hypnotic action in cases of grave cardiac and pulmonary disease with perfect success. The authors do not suggest that it can replace other hypnotics with slower and more lasting effect, but draw attention to it as a method by which under the most trying circumstances they never failed to induce within sixty seconds a condition closely resembling normal sleep.

An important factor of safety in the method is the rapidity of excretion of the drug. At each instant the patient exhibits the maximum effect of the dose so far given, for the moment injection ceases the action begins to pass off.

Thyroid Substance in Mental Diseases.—R. G. Naylor, in the *Australian Medical Journal* for November 16, 1912, reports the results obtained with thyroid feeding in twenty cases of mental disease, including primary dementia with or without catatonia, mania, acute and chronic melancholia, delusional and puerperal insanity. In each case the patient was put to bed, received one drachm of magnesium sulphate, and the next day fifteen grains (one gramme) of a trustworthy thyroid preparation, three times a day, after meals. This was repeated for four days, and the dose next increased to twenty grains (1.3 gramme) for five more days. The drug was then stopped, the patient having plenty of nourishing food and being kept abed for fourteen days, then maintained recumbent in the open air for a week more.

For the first three or four days there are headache, a full and frequent pulse, and a rise in temperature up to 99° to 101° F. Some patients get much excited. There is no danger, however, in the use of the drug if the cases are carefully watched.

The results obtained were, twelve cases cured, three slightly improved for a time, and five apparently uninfluenced. The cases showing the greatest increase in blood pressure were those in which the greatest benefit was secured. The author advises that all recent cases in patients under forty-eight years of age receive a course of thyroid. In melancholia, before the brain cells give evidence of degeneration, the results are very gratifying.

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THE MEDICAL TREATMENT OF EXOPHTHALMIC GOITRE.

The number of theories concerning the pathogenesis of exophthalmic goitre seems to be growing apace with time. Besides Möbius's conception, which attributed all the symptoms of the disease to excessive secretory activity of the thyroid gland, and the nervous theory, which made irritation of the sympathetic system the exciting factor of the same syndrome, there have arisen a number suggested by the innumerable researches on the internal secretions which have seen light during the last decade. Among these may be mentioned the thyrogenital theory (Schauta, Peter, Müller), based on the known functional relationship between the ovaries and the thyroid gland, which accounts for the development of the disease in predisposed women during physiological or operative menopause; the thyrohypophyseal theory (Salmon), based on the belief that the secretion of the pituitary controls the thyroid and that a destructive lesion of the former causes enlargement of the latter; the thyrothymic theory (Markham), in which enlargement and overactivity of the thymus is regarded as a pathogenic agent; the thyropancreatoadrenal theory (Eppinger, Falta, and Rudinger), in which hyperthyroidism is thought to cause excessive adrenal activity and inhibition of the pancreas; and finally, the intoxication thyroadrenal theory (Sajous), in which the morbid process is ascribed to excitation by poisons, of endogenous or exogenous origin, of the centres which govern the thyroid and adrenal glands, with resulting overactivity of both these organs. It is probable that each of these hypotheses, all of which are sustained by considerable clinical experience, has its place in the aggregate of cases, and that with Debove we should recognize from the standpoint of pathogenesis and therapeutics, not one type of exophthalmic goitre, but several.

This conclusion entails a greater discretion than has been the rule in our treatment of the disease, a careful identification of the cause being necessary in each case. When Graves's disease develops at puberty or during menopause, physiological or operative, it has been found to yield in many instances to the influence of ovarian extract. When it occurs in conjunction with an enlarged thymus, status lymphaticus, or general adenopathy, treatment of these conditions is in order, including the use of arsenic and the x rays. The thyropancreatoadrenal theory of the Vienna school has not as yet been sufficiently studied to form the basis of a specific treatment. When there is reason to believe that the pituitary is involved, pituitary gland might be tried. As to the older American adrenothyroid theory, with intoxication by poisons of internal or external origin as cause, the treatment is based on the now established antitoxic functions of the thyroid, but a clear distinction between an inadequate thyroid and a normal organ stirred to excessive activity must be made. In the former variety, a small goitre with no exophthalmos or tremor may be the only sign of the affection, but a precursor perhaps of a severe case of Graves's disease: a slight reduction in the proteid diet, attention to the bowels, and a single grain of desiccated thyroid gland, three times daily, will cause disappearance of the goitre, by compensating for the deficiency of thyroid secretion and relieving the gland of the hyperemia and swelling which excessive activity involves. Iodine and the iodides are often toxic in such cases, even when applied locally. A form due to autointoxication from the intestinal canal, which also belongs to this class, has been clearly identified by W. H. Thomson. Here a milk diet and other measures calculated to arrest the formation of intestinal poisons have been found by this clinician to be of curative value.

These instances will suffice to emphasize the fact that the modern therapeusis of exophthalmic goitre must be based upon a careful inquiry into the cause of every case in point and elimination of this fac-

tor where possible. It involves also, in most instances, the adoption of the intoxication theory with diminution of the antitoxic functions of the thyroid as the initial underlying feature of the morbid process.

FEEBLE MINDEDNESS AND THE BINET-SIMON SYSTEM.

Too much reliance must not yet be placed on the value of the Binet-Simon measuring scale for the determination of the mentally feeble. As a diagnostic test it has only a relative value in that class in which the Binet standard has been established. The originators of this system intended, and indeed restricted its use among French school children, who had for them certain familiar characteristics and from whom, and for whom, they devised a standard. This standard can have little accuracy of application to other classes of children without appropriate modifications. Indeed, certain investigators have made various modifications to suit the individuals with whom they were working. On the number and appropriateness of these modifications will depend to a large degree the value of this system.

The Binet-Simon system is of little use in diagnosticating feeble mindedness. No tabulated system is necessary to detect the distinctly feeble. They are easily apparent to every one, even on the barest contact. The system has practical application only in estimating the degree of retardation, in respect to mental development, of an individual when compared to an arbitrary standard-normal used as a control. All those who do not measure up to this standard are considered to be retarded to a degree proportionate to the distance from the normal. This control or standard becomes more accurate when derived from the class for which the standard is devised—somewhat after the principle of the application of autogenous vaccines; that is, a standard for French children, for American, for German, etc.

The Binet-Simon system commits itself only to the diagnosis of defectiveness or retardation and not to that of distinct feeble mindedness, unless the retardation amounts to at least ten years. Retardation of the mind may be compared to poor physical development, feeble mindedness to physical invalidism, imbecility to a physical condition bordering on the moribund, and idiocy to death.

The Binet-Simon calculation of a ten year retardation before it considers the retardation to be so marked as to be tantamount to positive enfeeblement, is very liberal when it is considered that this measuring scale is applied only up to the age of sixteen years. At this age an individual is really an adult, and is everywhere considered *sui juris*. If, then, he has but the mentality of a six year old individual, he is so obviously defective that no such elaborate means as the Binet-Simon measuring scale is needed to detect him. Such an individual has had only about three years of mental development, if the time at which a child usually gives signs of the exercise of the mind is placed at about three years.

It is easy, therefore, to dispose of the ten year class. But what is to be done with defectives who are retarded a less number of years? Are they feeble minded or not? With the Binet-Simon scale they are not, not having been defective ten years. Besides, to be consistent, the diagnosis of positive feeble mindedness would have to be deferred until the expiration of this ten year period. Up to that time the real significance of the retardation could not be determined. This brings us back again to the old method of determination, namely, the observation and education of the child under reenforced methods of education, and the postponement of any opinion until it is shown that the child does not progress materially under such methods. Any sequential progression would point only to a simple retardation, amenable to treatment under painstaking and scientific methods. The Binet-Simon system is, therefore, of assistance only in sifting out and segregating those retarded mentally. But its value is none the less great, since from these must necessarily come the real defectives—the feeble minded.

URBAN AND RURAL LIFE FROM THE VIEWPOINT OF HYGIENE.

A paper read by Dr. Peter H. Bryce, chief medical officer to the Bureau of Immigration, Canada, at the last meeting of the Canadian Public Health Association, brought vividly before the medical profession and the laity the fact that the drift of population, in the new world as in the old, is to the cities. The figures quoted by him as regards immigration to Canada were so remarkable that the attention of all interested in questions of public health should be directed to them. Canada is very sparsely populated and her chief concern is to procure healthy, lusty immigrants to cultivate her immense tracts of agricultural land. But Doctor Bryce clearly points out that what is abundantly apparent in Canada, even more than in the United States, is that in spite of every organized effort on the part of the government to place immigrants on the land the aggregate of immigration to Can-

ada in ten years, which was 1,114,802 by the seaports plus an additional 524,852 in nine years from the United States, has not equaled in rural increase the natural increase of the population of Canada in 1901 at a rate of twelve per cent. in ten years. On the other hand, while the total population increase in Canada was from 5,371,315 to 7,204,838, or thirty-four per cent., the total urban increase was from 2,021,799 to 3,280,444, or an increase of 1,258,645 or 62.25 per cent.

The increase of urban population in this country is relatively almost as great as in Canada, and in Australia the city population grows by leaps and bounds. In Europe the manner in which people are flocking to the towns is arousing alarm in the minds of foreseeing individuals, and in Great Britain the situation has become acute and dangerous from almost all points of view. In Europe various measures have been devised to relieve the congestion, the main means being by emigration, but when emigrants, on reaching the lands in which is abundant room, prefer to perpetuate the problems of the old world by massing together in large centres, the difficulties in the way of solution are greatly aggravated. From the economic, as well as from the health standpoint, the matter is very serious. The land must be cultivated, and in this country, in Canada, and in Australia the inhabitants are naturally averse to permitting immigration of Asiatics on a wide scale. Thus all these countries are on the horns of a dilemma. White immigrants, as a rule, will not settle on the land, and the yellow and black ones are not allowed to do so, thus much of the soil is left untilled.

From the health standpoint, the question has an alarming aspect. City life, physically, mentally, and morally, places a greater strain on the individual than country life and tends to produce a race inferior in most respects. In Europe the effects of long continued industrial and town life are only too palpably evident, and it should be the object in the comparatively thinly populated countries of what is known as the new world to avoid the mistakes which seem as if they might wreck some of the richest and most prosperous nations of Europe. Back to the land is no parrot call; it is inspired by regard for the best interests of health, mental, physical, and moral.

THE ETIOLOGY OF CANCER.

Professor von Czerny has issued an interesting report, according to the *Münchener medizinische Wochenschrift* for April 1, 1913, on his forty years' experience with cancer.

He believes that for the formation of cancer, 1, a certain individual predisposition is necessary which can be either congenital or acquired, although we do not know exactly the nature of this predisposition. For example, certain material which would inhibit or defend the body against the formation of cancer may be absent; debilitating diseases may form a suitable field, etc. 2. There must exist a local initiation, such as trauma, injury, inflammation, a scar, or other congenital malformation. 3. Finally, a real cancer organism must exist, which possibly belongs to the group of the so far unknown ultramicroscopic organisms and which is brought to the human subject by an intermediate carrier. Whether this carrier is the bedbug (Morau) or other blood-sucking parasites or one of the family of the small round worms carried by cockroaches is not certain. Whether heredity plays an important rôle we do not know, but observations seem to point to a certain infection, not direct, but indirect through parasites. As in all other infectious diseases, the virulence of the exciter is of great import, so that a healthy body can overcome a small number of exciters.

SIMPLE METHOD OF REDUCING SHOULDER DISLOCATIONS.

An improvement on a well known method of reducing dislocations at the shoulder is quoted by *Presse médicale* for April 5, 1913, from a work on the practice of medicine and surgery in the country by Legrand, of Marcigny. This practitioner and author had many hundreds of cases and was so frequently annoyed by the poor quality of assistance obtainable that he was forced to devise some way of reducing these dislocations by himself. His custom was to extend himself supine on a mattress by the side of his patient, their heads being in opposite directions, to fasten a handkerchief around the patient's wrist, and, placing his heel in the latter's axilla, to pull till reduction was complete. He always found the strain on his arms very severe and was eventually inspired to tie the ends of the handkerchief to a napkin which he passed around his own body like a shoulder belt. Thenceforward he had little trouble. Once when operating on a Goliath of a patient, he found great aid upon the latter's turning over slightly on his side; this movement, modifying somewhat the muscular contraction, caused the arm to slip easily into place.

GASOLINE INTOXICATION.

Intoxication by gasoline is not an unknown phenomenon in the United States. Selby W. Plummer reports a case in the *British Medical Journal* for March 29, 1913, of a boy, aged sixteen years, who was overcome while cleaning out the pit of a private garage near Durham and was lifted out unconscious. Shortly afterward he vomited violently, then seized his brush and attempted to continue his work. At his home, two miles distant, whither he was instantly removed, the physician noted shallow breathing, a thready pulse, marked inward strabismus, and miosis; the lips were bright red and the cheeks flushed. He was cold, his teeth chattered, and the reflexes were absent,

as well as the sensory reactions. Three hours later, treatment having apparently not been found necessary, the patient could be aroused to answer questions and complained of intense headache and pain in the stomach; the reflexes were still absent. Later he fell asleep and spent an uneventful night. The next morning his memory of the accident was poor, although he remembered being sick. The medical adviser believes the boy was not subjected to the gasoline fumes longer than three and a half minutes, and states that an exposure for a very few more moments would have been fatal.

News Items.

Radiotherapeutics in New York.—A department for treatment with radium emanation has been established at the New York Post-Graduate Medical School and Hospital, for public use and scientific investigation.

Typhoid Fever in Royersford, Pa.—It is reported that an epidemic of typhoid fever is spreading over the towns of Royersford and Spring City, Pa., with alarming rapidity. Within a few days sixteen cases with three deaths were reported.

New Office Building for Physicians in New York.—It is reported that plans are being prepared for a thirty-five story office building for physicians, to be erected at the southeast corner of West End Avenue and Seventy-second Street. The estimated cost is $2,000,000.

Campaign to Raise Fund for the Mountainside Hospital, Montclair.—Residents of Montclair, Bloomfield, and neighboring towns in New Jersey have organized a twelve day campaign to raise $300,000 for the Mountainside Hospital. Subscriptions amounting to nearly $50,000 were announced at a dinner given in Montclair on the evening of April 7th. Half the amount of the fund is to be used for a new hospital building.

Meetings of Philadelphia Medical Societies.—Medical societies in Philadelphia will hold meetings during the coming week as follows: Monday, Medical Society of Woman's Hospital; Tuesday, West Philadelphia Medical Association, Medicolegal Society, and St. Mary's Hospital Clinical Society; Wednesday, County Medical Society; Thursday, Pathological Society and the Germantown Branch of the County Society; Friday, Neurological Society, South Branch of the County Society, Northern Medical Association, and the Medical Club (reception).

Hall of Public Health Opened.—The Hall of Public Health of the American Museum of Natural History was opened on the evening of April 16th, at a public meeting, Dr. Henry Fairfield Osborn, presiding. The evening was devoted to a discussion of the campaign for civic cleanliness instituted by the Department of Health of the City of New York, and the plans for the spring cleaning, which will begin next week, were announced. Among the speakers were Health Commissioner Lederle and Dr. C. E. A. Winslow, curator of the department of public health of the museum.

Medical Society of the County of New York.—A stated meeting of this society will be held on Monday, April 21st, the change in date being due to the fact that the House of Delegates of the State society meets in Rochester on April 28th. The following papers will be presented at the scientific session: The X Ray Treatment of Uterine Fibroids, Menorrhagia, and Metrorrhagia, by Dr. Samuel Stern; The Internal Secretions as They Concern the Gynecologist, by Dr. Samuel Wyllis Bandler; The Elastic Area in the Isthmus of the Uterus an Early and Positive Sign of Pregnancy, by Dr. Louis J. Ladinski; The Municipal Disposal of Garbage, a Menace to Public Health, shown in moving pictures by Mrs. Spiegelberg; Demonstration of the Physiological Method of Treating Flat Foot, by Dr. Jacob Teschner. These papers will be discussed by Dr. Joseph Brettauer, Dr. Robert T. Frank, Dr. Edwin B. Cragin, Dr. Hermann J. Boldt, Dr. J. Riddle Goffe, Dr. Robert L. Dickinson, Dr. Ellice McDonald, and others.

Philadelphia Surgical Clinics Bulletin.—On April 14th the issuance of a daily *Bulletin of Surgical Clinics* was inaugurated by a committee of twenty-one physicians representing the staffs of the various hospitals of the city. This bulletin will contain a list of the operations to be performed in thirty-three city hospitals, and will be posted each morning in the hospitals and in the College of Physicians, where a bureau of information has been established, which may be reached by telephone. The committee believes that these bulletins will not only enable visitors to find out promptly where they can see operations which will be of interest, or operators whose technic they wish to study, but will also stimulate postgraduate study.

Federal Authorities Ask Doctor Friedmann to Resume Demonstrations of Tuberculosis Treatment.—An intimation has been officially conveyed to Doctor Friedmann by the United States Public Health Service that the time has arrived for him to resume the demonstration of his treatment for tuberculosis, in order that the federal authorities may be able to form a judgment on the value of the treatment. The letter to Doctor Friedmann was signed by Passed Assistant Surgeon John F. Anderson, director of the hygienic laboratory and chairman of the board of investigation. Having the approval of Surgeon General Blue and Secretary of the Treasury McAdoo, it is virtually an ultimatum to Doctor Friedmann to comply promptly with promises made to the medical authorities that he expedite his treatment so that the government may reach a verdict as soon as possible for the benefit of the American people.

New York Division of the Army Medical Reserve Corps.—This division of Medical Reserve Corps of the United States Army, which was recently organized, held a meeting on April 11th. Major E. E. Persons, of the Medical Corps, presented a paper on the National Defense and the Part the Medical Department will Play Therein, which was discussed by Colonel William Stephenson, Lieutenant Colonel Raymond, and Major Truby, of the Medical Corps, and the following first lieutenants in the Medical Reserve Corps: Dr. John A. Wyeth, Dr. Howard Lilienthal, Dr. Reynold Webb Wilcox, Dr. Max Einhorn, Dr. Walter M. Brickner, Dr. H. Sheridan Baketel, Dr. Thomas E. Satterthwaite, Dr. Harold Hays, and others. The New York Division is a very enthusiastic organization, and its members are planning a definite line of instruction, which will include field work, didactic instruction, and drill of the mounted officer.

American Society of Tropical Medicine.—The tenth annual meeting of this society will be held in Washington, D. C., on May 6th, 7th, and 8th, with headquarters at the Hotel Bellevue. The first item on the programme is the address of the president, Dr. Edward R. Stitt, of Washington, on the Value of a Course in Tropical Medicine for the Training of the Internist. This will be followed by the reports of the secretary, Dr. John M. Swan, of Rochester, N. Y., and of the treasurer, Dr. C. Lincoln Furbush, of Philadelphia. An excellent programme of scientific papers has been arranged, an interesting feature being a general discussion, on Thursday, of the Importance of Intestinal Parasites in Tropical Pathology. Complete programmes may be obtained from the secretary, Dr. John M. Swan, 457 Park Avenue, Rochester, N. Y.

Course in Tropical Medicine at the University of Maryland.—At the beginning of the year a course of lectures on tropical diseases was inaugurated at the Maryland University School of Medicine, under the direction of Surgeon J. A. Nydegger, of the United States Public Health Service. The first lecture was given on Monday, January 13th, by Doctor Nydegger, his subject being History of Tropical Medicine from Ancient Times Down to the Present. On each succeeding Monday throughout the term there has been a lecture on some subject relating to tropical medicine, usually illustrated by lantern slides. The attendance at these lectures has been greatly beyond expectation, although voluntary, showing the decided interest which is being taken in tropical diseases at the present time. Next year the course will be extended to include the full scholastic year. Cases and specimens of tropical diseases will be collected and exhibited, in addition to which clinical lectures and practical instruction will be given in the diagnosis and detection of these conditions. It is intended to make the chair of tropical medicine a permanent one in the university

Medical Society of the State of New York.—The 107th annual meeting of this society will be held in Rochester on April 29th and 30th and May 1st, under the presidency of Dr. John F. W. Whitbeck. A programme has been mailed to each member, and it is hoped that there will be a large attendance from New York county, as the meeting promises to be one of unusual interest. Full information may be obtained from the office of the society, New York Academy of Medicine, 17 West Forty-third Street.

Medical Association of the Greater City of New York.—A stated meeting of this association will be held in Du Bois Hall, New York Academy of Medicine, on the evening of April 21st. The programme will contain the following papers: Intestinal Adhesions, by Dr. Robert T. Morris; Relation of Adhesions and Intestinal Angulations to Chronic Constipation, by Dr. Robert Coleman Kemp; Radiographs of Obscure Stomach and Intestinal Cases, with a Caution Regarding Dangerous Tendencies in Recent Radiography of the Gastrointestinal Tract, by Dr. Sinclair Tousey. Among those who will take part in the discussion of these papers are Dr. Anthony Bassler, Dr. Ward J. MacNeal, Dr. William P. Healy, Dr. Parker Syms, and Dr. Thomas A. Gonzales. All who are interested are invited to attend.

A Medical Missionary Wanted in Beira, Portuguese East Africa.—The American Board of Commissioners for Foreign Missions has issued an appeal for a medical missionary to go to Beira, a town of about one thousand inhabitants, situated south of the Zambesi River, in Portuguese East Africa. The field is an important one and presents large possibilities. Applicants must be graduates of a high grade medical college, and must be thoroughly qualified professionally and physically. For four years the board has been trying to fill the position, and the man who is willing to undertake the work will be sent to Lisbon to acquire a working knowledge of the Portuguese language, and to London for a special course in tropical medicine. Physicians who wish to investigate this and other opportunities for medical missionary service in India, China, Turkey, Korea, and Persia should write to Mr. Wilbert B. Smith, 600 Lexington Avenue, New York.

Massachusetts Homeopathic Medical Society.—The annual meeting of this society was held in Boston on April 8th, 9th, and 10th, under the presidency of Dr. George R. Southwick. Officers to serve for the ensuing year were elected as follows: President, Dr. P. Brown, of Springfield; vice-presidents, Dr. John H. Paine, of Boston, and Dr. Mary A. Leavitt, of Somerville; secretary, Dr. E. S. Caldwell, of Boston; treasurer, Dr. T. M. Strong, of Boston; chairman of the Board of Censors, Dr. George R. Southwick, of Boston. The second day's proceedings were brought to a close by a reception to the retiring president and Professor Lemuel H. Murlin, of Boston University, and a banquet at Young's Hotel. Dr. J. Wesley, of Somerville, acted as toastmaster, and addresses were made by Doctor Southwick, Doctor Murlin, Dr. N. Emmons Paine, of West Newton, and Dr. John L. Coffin, of Boston. All the speakers made an urgent appeal for an endowment fund for the medical department of Boston University.

Fourth International Congress on School Hygiene.—This congress will be held in Buffalo, N. Y., August 25 to 30, 1913, under the patronage of President Wilson. Dr. Charles W. Eliot, president emeritus of Harvard University, is president, and Dr. William H. Welch, professor of pathology, Johns Hopkins University, and Dr. Henry P. Walcott, chairman of the Massachusetts Board of Health, are vice-presidents. Dr. Thomas A. Storey, professor of hygiene, College of the City of New York, is secretary general of the congress, and further information regarding the work of the congress may be obtained from him. There is now being arranged a comprehensive programme of papers and discussions covering the entire field of school hygiene. There will be scientific exhibits representing the best that is being done in school hygiene, as well as commercial exhibits of practical and educational value to all interested in schools. There will be delegates from the leading nations, and from every college and university of note in this country, and from various other educational, scientific, medical, and hygienic institutions and organizations. The congress is also open to all persons interested in school hygiene. Applications for membership should be sent to the secretary general.

Personal.—Sir William Osler, regius professor of medicine at Oxford University, arrived in New York on Sunday, April 13th. He will go to Baltimore to attend the opening of the new psychiatric clinic at Johns Hopkins University, where he was for many years professor of medicine. Sir William was accompanied by Dr. F. W. Mott, of London, and Professor William McDougall, of Oxford University.

Dr. R. B. Tuesler, of St. Luke's Hospital, Tokyo, Japan, delivered an illustrated lecture in Philadelphia on Wednesday evening, April 16th, in the interest of medical missions in the Far East. Dr. William H. Jefferys, of Shanghai, also spoke.

Colonel William Stephenson, Medical Corps, United States Army, who for nearly two years has been stationed at Governor's Island, New York, as sanitary inspector of this department, has been ordered to Chicago to become chief surgeon of the Central Department. This is a promotion for Colonel Stephenson, who is recognized as one of the most accomplished sanitarians in the Medical Corps of the Army.

Dr. J. N. Hurty, of Indianapolis, State health commissioner of Indiana, has been employed to draft a model health bill for the State of Iowa and submit it to the Iowa Legislature, at the request of the speaker of the Iowa House of Representatives.

Society of Sanitary and Moral Prophylaxis.—Feeling that a passage of formal resolutions by the society, relative to the recent loss it has sustained by reasons of the untimely death of its founder and president, Dr. Prince A. Morrow, would by no means represent its feelings relative to his death, the Executive Committee of the Society at a meeting held on Tuesday, April 1, 1913, passed the following resolution:

Resolved, that a Memorial Meeting of this Society may be held on the evening of Thursday, May 22, 1913, at the New York Academy of Medicine, to commemorate the life and work of Dr. Prince A. Morrow, our late president, and that an announcement of this be made at the next regular meeting of the society.

A committee was duly appointed to prepare the programme for the memorial meeting. This committee consisted of James Pedersen, M. D., Edward L. Keyes, Jr., M. D., and Dr. Thomas M. Balliet.

Work has already commenced in preparation for this memorial meeting and all members of the society will receive notice in due time of the completed programme.

The formal resolutions, adopted April 10th, were as follows:

The death of our honored president, Dr. Prince A. Morrow, has come to the members of this society as a deep personal sorrow, and is an irreparable loss to the cause in which he so ably and so heroically led. Almost single handed he inaugurated, in 1905, a movement in this country which is already nationwide, and which promises to be the first successful attempt, by means of public enlightenment, to reach the root of an evil of the ages and a curse of mankind. A man of great intellectual force, of strong personality, and of unflinching courage, he entered upon the task against unusual odds, inspired others with his own enthusiasm, and founded this, the first society of its kind in America, which has already become the parent of over thirty similar societies in as many different States.

In the guidance of this movement which had to deal not only with a delicate subject, but also with a false public sentiment, the greatest wisdom was required. Doctor Morrow led the way with unerring judgment and tact. To-day there are arrayed in the ranks of his followers many of the foremost and conservative men and women of the country.

To those who came more intimately in contact with him as his personal associates on committees, his death comes as a personal bereavement; to all of us it is a loss which will be deeply felt for a long time to come. All knew him as a man of great ability, of the highest character, courageous and true; and as a society, we place upon our records this brief testimony of our love and high esteem. We extend to his family our deep sympathy in their great bereavement and irreparable loss.

Edward L. Keyes, Jr., M. D.,
Thomas M. Balliet
Henry P. de Forest, M. D.,
Committee on Resolutions.

Pith of Progressive Literature.

CORRESPONDENZ-BLATT FÜR SCHWEIZER AERZTE.

February 22, 1913.

Varicella in Adults.—C. Stäubli observed three cases of varicella in adults during the past year. Two of them occurred in brothers who were stricken at the same time. One of the cases presented severe general symptoms, an infiltrative character of the efflorescence, and at the beginning presented the picture of a moderate variola. In none of the cases could the source of the infection be traced, from which fact the conclusion must be drawn that in cow pox an indirect contagion among many persons is possible.

Treatment of Third Stage of Labor.—K. Reber reports that in the obstetrical wards at Berne the following rules are observed in the treatment of the third stage: When the hemorrhage is not particularly profuse, the uterus is watched uninterruptedly for two or three hours for the state of its contractility until definite signs of the spontaneous separation set in. Only at this juncture is an attempt at expression permitted. In cases of more severe hemorrhage due to partial separation of the placenta, Crede's method is to be tried and when expression is not accomplished the attempt is to be repeated under an anesthetic. With the aid of narcosis manual expression has the desired effect. Only after this procedure is an intrauterine manipulation permitted. Notwithstanding these carefully planned indications in 1.8 per cent. of the cases manual separation of the placenta had to be resorted to. The author believes this large percentage to be due to the many untreated cases of endometritis of the women of Berne.

WIENER KLINISCHE WOCHENSCHRIFT.

February 6, 1913.

Parasitotropy and Toxicity of Salvarsan.—K. Ullmann shows that in the syphilitic tissues of man and in all the blood constituents of mice and rats thus far examined which contain the Noganatrypanosomes or spirochete of recurrent fever there have been found large deposits of arsenic after salvarsan treatment, while in all of the examinations of control subjects not containing spirilla, no trace of arsenic could be found. These researches are therefore strictly in accord with the supposition of the parasitropic action of salvarsan.

February 13, 1913.

Internal Secretion of the Mamma. — Schiffmann and Vystavel show that injections of mammin Poehl, i. e., sodium chloride extract from the hides of cows which have been freed from the so called precipitable proteids, had the following effect: Out of four pregnant animals treated with mammary extract all aborted. In growing animals injection of the extract of mammary glands from other and the same animals has an inhibitory effect on the development of the glands and the genitals.

Radiological Findings in the Colon in Renal Tumors.—A. Luger does not agree with Stierlein that new formations in the kidney and its neighborhood can be detected by a typical median dislocation of the colon. In most of the cases the author found that the displacement was lateral and in many other cases the portion of the colon remains lying above the tumor. In a detailed case of left sided hypernephroma another striking Röntgen picture was disclosed, showing the impossibility of filling that portion of the colon lying above the tumor. Clinically the general symptoms were those of a chronic intestinal stenosis, so that the diagnosis of intestinal tumor was made at first.

Lordotic Albuminuria.—K. Dietl asserts that for the production of lordotic albuminuria, beside the mechanical moment of lordosis, the condition of the bloodvessels must be taken into account. Out of the six cases examined, four showed marked vasomotor disturbances with rigidity of the arteries, hemicrania, asthma, etc., from which it is evident that the strengthening of the vasomotor system and improvement of the general health are sufficient to bring about the cessation of the albuminuria.

Conditions for the Development of a Tuberculous Meningitis.—H. Koch says that tuberculous meningitis develops chiefly during the last months of winter. It is a disease attacking children in the earliest years, the first and second especially. In twenty-three per cent. of the cases hereditary influence was proved. In one family four out of nine children died of this condition. It could be shown that nourishment of the blood exerted a protective influence. In the great majority of the cases other diseases preceded the tuberculous meningitis, especially measles, whooping cough, varicella, diseases of the lungs, and tuberculous affections of other organs. There is no doubt that these diseases released the meningitis, partly by direct mechanical influence, partly indirectly, by weakening the organism. These factors are of significance in the formation of tuberculous meningitis only when at the same time active tuberculous processes are present in the body.

February 20, 1913.

Formation and Prevention of Consecutive Disturbances in Pleural Adhesions.—L. Hoffbauer says that the atalectasis of the lower portions of the lungs in pleural adhesions is due just as much to the resultant disturbance in the circulation as to the low position of the diaphragm, the action of which is compromised. Discomfort is lessened by lying on the diseased side, not on the normal side. Somewhat later abdominal breathing is to be practised. These measures are for the purpose of increasing the activity of the diaphragm muscles and to favor its position.

February 27, 1913.

So Called Orthotic Hemoglobinuria.—L. Jehle, in adding to the observation of Porges and Strisower reported in No. 5, 1909, of this publication, cites two cases of orthotic albuminuria in which lordosis produced attacks of hemoglobinuria.

Effect of Carrying the Spine in Orthotic Albuminuria.—L. Jehle found that orthotic albuminuria due to pathological lordosis can be removed immediately by having the patient bend one leg at right angles to the hip and knee, and supporting it thus by some device. After retaining this position for ten to fifteen minutes even severe albuminuria

disappears. This procedure serves to distinguish the orthotic from the nephritic albuminuria.

Action of Adrenalin in Acute Experimental Nephropathies.—Hess and Wiesel found that rabbits poisoned by uranium oxide can be kept alive by adrenalin injections as long as there is no anuria, even after the animals have received many times the lethal dose of uranium. Signs of improved function are decreased albuminuria and increased diuresis. The fast color of uranium oxide is noted in the clinical picture. The intense parenchymatous degeneration of the kidneys is in no way influenced by adrenalin.

PRESSE MÉDICALE.

March 15, 1913.

Cholecystectomy from Behind Forward.—A. Gosset and E. Desmarest, in an illustrated article, advocate this type of cholecystectomy because of certain disadvantages attending the ordinary method, in which the fundus of the gallbladder is freed first and the operator then works down toward the bile ducts. These disadvantages are, that in beginning to free the fundus with the scalpel the liver tissue is not infrequently injured, that several ligations of branches of the cystic artery are required instead of one ligation of the main trunk, and that in pulling upon the gallbladder, the biliary duct may be brought out and kinked and the cystic duct consequently easily injured. In the procedure employed by the authors, which has given uniformly successful results in thirty-two cases, the biliary duct is first exposed behind the angle of the duodenum, its covering peritoneum broken through with gauze, the lower part of the mesocyst cut to expose the cystic duct, the latter ligated and cut near its junction with the hepatic duct, and then peeled upward, putting on the stretch the vessels to the gallbladder, which can thus be easily ligated. The remainder of the gallbladder is then rapidly freed and removed, leaving as much as possible of its peritoneal covering so that a canal can be formed for subserous drainage. The operation is effected more quickly than with the old method, the vessels can be more perfectly dealt with, and in many cases even no drainage is required. The operation is not applicable alone, as might be thought, to cases where the ducts have been but slightly involved, since even where there is marked and long standing fibrosis the terminal portion of the cystic duct is healthy in two thirds of the cases and can therefore be easily ligated.

Diagnosis of Aortic Aneurysm.—M. Letulle reports a case of supposed tumor in the mediastinum in which x ray examination seemed to show the mass to be independent of the aorta and nonpulsatile, but operation, nevertheless, revealed a large sacciform aneurysm, which, as autopsy later showed, had even eroded the spinal column. He concludes that absence of pulsation under the x rays in doubtful cases of this kind does not permit of ruling out aneurysm.

March 19, 1913.

Treatment of Gunshot Wounds.—P. Reclus argues against the removal of bullets discharged from military small arms or revolvers unless they are so superficially situated as to be practically visible, all aseptic precautions can be taken, and especially unless they can be extracted without additional injury to the tissues. The only conditions indicating extraction are, 1, penetration of the bullet into a joint, hindering the function of the latter; 2, where the encysted projectile causes pain—an exceptional circumstance; 3, where it has caused serious injury to a vessel, nerve, or visceral organ. In the last of these contingencies, indeed, the intervention is not for the purpose of removing the bullet, but for arresting hemorrhage, sewing up openings in hollow viscera, etc. Under all ordinary circumstances, the application of tincture of iodine to the orifice of entrance of the projectile is alone indicated.

Heliotherapy in Nontuberculous Affections.—A. Aimes points out that exposure to sunlight is of therapeutic utility, not only in "surgical" tuberculosis, but also in a large variety of other conditions, general and local. Thus it is of benefit during convalescence from infections, in anemia, in rhachitis, in acute rheumatism, and in neurasthenia, while among local conditions those likely to be improved include sluggish wounds and ulcers, chancroids, suppurating buboes, erysipelas, ulcerated skin cancers and luetic lesions, burns, gangrenous skin conditions, ununited fractures, osteomyelitic cavities, sprains and contusions, congestive states of deep organs, and affections of the conjunctiva.

SEMAINE MÉDICALE.

March 19, 1913.

Esophageal Pulse and Jugular Pulse in Primary Cardiac Tumors.—L. Bard presents tracings from a case of primary neoplasm of the left auricle and points out the fact that in cases of this variety in which the diagnosis during life is uncertain, information of considerable weight may be obtained by comparing the jugular and esophageal tracings, the former representing the activity of the right auricle and the latter of the left auricle, which is the portion of the heart most frequently involved in primary cardiac tumors.

REVUE DE MÉDECINE

March, 1913.

Research on the Presence of Koch's Bacillus in the Blood in the Tuberculous.—A. de Verbizier was unable to find the tubercle bacillus in the blood of any of a series of fifteen patients. Guineapig inoculations were also negative.

Infections by the Paratyphus B Organism.—E. Job asserts that from the clinical standpoint two classes of paratyphus B infection occur, that resembling typhoid fever and that resembling alimentary intoxication. Closer study showed, however, that points of similarity exist between these two forms and, indeed, bacteriologists have already demonstrated that the paratyphoid bacillus and that of meat poisoning were identical. While paratyphus B infections may be propagated in the same ways as is typhoid, the fact that the former is far more widespread in distribution and occurs in association with both animate and inanimate matters renders its origin, in concrete cases, often impossible of determination. Of twenty-eight cases observed by the author, seven were sporadic, and in

each of the latter the origin of the infection could not be discovered. The measures required in paratyphoid prophylaxis are the same as those already in force for typhoid, viz., isolation of cases, pure water, proper drainage, etc., but they are less likely to prove effectual, owing to the ubiquitous distribution of the germ.

Tuberculous Colitis and Pericolitis.—M. Piéry and A. Mandoul report twenty cases in which acute, subacute, or chronic colitis or pericolitis were observed, either during, or more frequently after the course of various disturbances of known tuberculous nature. In addition to hypertrophic tuberculosis of the cecum, ulcerative tuberculosis of the colon, obstructive intestinal fibrosis, and tuberculous appendicitis, all of which are already well recognized, the authors would ascribe to the tubercle bacillus the causation of a disturbance termed by them "tuberculous muccorheic enterospasm," many cases of mucomembranous enterocolitis and of plastic colitis and pericolitis and some cases of Hirschsprung's disease. Measures such as prolonged vegetarian forced feeding, recalcification, outdoor life, residence at great altitudes, heliotherapy, etc., are often indicated in cases of enterocolitis, even where there is merely a suspicion of tuberculous disease.

SEMANA MÉDICA.

January 13, 1913.

Present View of Tuberculosis.—Quevedo, referring to the different views we have at present regarding the contagiousness and prophylaxis of tuberculosis, establishes the following conclusions: 1. In the actual state of science we cannot deny the existence of three types of tuberculosis, the human, the bovine, and the avian. 2. Man is generally infected by the human bacillus and seldom with the bovine. 3. The boiling at home of the mixtures of commercial milk renders it free from tuberculous contagion. 4. The principal seats of contagion are the lungs, the intestines, the skin, etc. 5. Raw milk from cows suffering with tuberculous mastitis, if taken habitually, may produce tuberculous lesions of special type. 6. Meat from tuberculous animals taken raw is dangerous only if the lesions are of a certain type. 7. As to the innocuousness of the meat the anatomopathological form of the tuberculous lesions is more important than the greater or less generalization of the infection. 8. The present idea about inspection and confiscation is erroneous, so the author suggests that it should be modified by a professional convention in order to make effective the prophylaxis of human tuberculosis and to facilitate fighting the bovine form.

Effects of Salvarsan on the Internal Ear.—Botella, speaking about the effect of salvarsan on the internal ear, says that the Ehrlich drug, like all the heroic agents, must be handled with great caution, and physicians must convince patients that the immediate cure they expect is not possible when all other treatment is suspended, and that at the same time the drug favors facial and auditory complications. An injection of salvarsan must never be given without a previous and scrupulous otological examination. Salvarsan must never be applied to a patient suffering from a recent lesion of the acoustic nerve in either of its branches.

Prophylaxis of Sudden Death.—De Castro states that in the sudden pass from life to death there is a moment which must be known by the physician in order to be able to determine the cause of death and to prevent it when possible. The principal symptoms which constitute this moment between life and death are apoplectic stroke, syncope, coma, and collapse. Death, the author says, has, of course, no treatment, but a more effective prophylaxis should be employed in order to lessen the awful number of cases of sudden death which happen in the world. As death almost always depends on the habits observed during life, there are two rules to lessen the number of sudden deaths, a great deal of philosophy and a great deal of hygiene, in other words, to know how to live and to know how to die.

February 20, 1913.

Detection of Carbon Monoxide in the Blood.—De Dominicis asserts that in every case of poisoning by the oxide of carbon the blood suffers characteristic changes, and these cases are so frequent that they make a very interesting chapter of the technic of medicolegal science. The blood takes a special cherry red color which cannot be confounded with any other, so that on the dissecting table the special poison is detected by means of spectroscopic examinations. The oxide of carbon, *in vivo* as *in vitro*, substitutes the oxygen of the oxyhemoglobin leading to a formation of carbooxyhemoglobin of cherry red color. This special color of the blood which already appears extensively in all the visible mucous membranes, is more apparent in the serous membranes and especially in the brain. To examine the blood which contains oxide of carbon, the author says that he employs first the spectroscopic examination as suggested by Hoppe-Seyler. The blood is diluted with distilled water and then placed in a vial in order to obtain between D and E two different bands; the ocular microspectroscope of Abbe can be used for all examinations. The author, after explaining the technic of the process, asserts that the oxide of carbon in the blood can also be detected by numerous chemical reactions which are all based on the greater resistance of the carbon monoxide blood compared with that of the normal fluid. Of all these reactions the best is the one suggested by Kunkel Wetzel with tannin. The reaction is carried out in an ordinary test tube. The blood is added to ten c. c. of distillate water; afterward is added ten c. c. of a three per cent. aqueous solution of tannic acid. The mixture is now shaken and the test tube closed with cotton and paraffin. The same is done with the normal blood, which acquires immediately a brick red color. The blood which contains oxide of carbon appears of a rose red color.

BRITISH MEDICAL JOURNAL.

March 29, 1913.

The Mucus Channels and the Blood Stream as Alternative Routes of Infection.—Charles J. Bond contends, as a result of extensive studies, that infective organisms frequently gain access to many portions of the body by way of the mucus chan-

nels, along which they ascend by the reverse currents of mucus developed. These reverse mucus currents arise as a result of: 1. Stasis of the normal secretion or excretion; 2, the presence of a fistulous communication at the proximal end of the tract by which the contents can escape without passing down the regular channel; 3, through active absorption of the contents of a mucus canal at some one point in its course, acting much as does a fistulous tract. The passage of insoluble indigo particles against the normal current in the mucus channels has afforded proof of this as a possible mode of spreading infective organisms. Duodenal ulceration may thus result from stasis in the small intestine, although there has been no fecal regurgitation. The gallbladder, biliary ducts, and pancreatic ducts may become infected in a similar manner through stasis below. The genitourinary tract of both male and female supplies many examples of this type of ascending infection. Similarly infections of the female breast and of the salivary glands may often be accounted for on a like basis. In general such ascending infections present symptoms somewhat different from those resulting from hematogenous infection. In the case of hematogenous infection the organism is very much attenuated in virulence before it escapes into the channel which it is destined to affect, as the gallbladder or pelvis of the kidney, and its growth there is almost free from symptoms. On the other hand, if it escapes in virulent form it is usual to find severe symptoms of a septichemia, of which the local infection is but a small part. When the infection reaches a region by means of ascending mucus transmission it is usual to find localized symptoms of such infection without any evidence of simultaneous or preceding blood infection. This question of source of infection has an important bearing upon the matter of immunity and such studies should lead to much valuable information, both in regard to treatment and especially toward determining whether or not the secretions from mucus organs contain active protective substances.

Henoch's Purpura with Intussusception.—Seymour Barling reports a case of this kind occurring in a boy, aged four years. Operative removal of a considerable portion of the involved intestine led to recovery. The association of intussusception with Henoch's purpura is not very common, and the correct diagnosis of the presence of intussusception is difficult at times on account of the presence of severe abdominal symptoms in the disease. Barling suggests the following points for diagnosis: Intussusception is very common under the age of three years and Henoch's purpura is rare below this age. A past history of joint symptoms or of purpura may be of great assistance in a case in which these are absent at the onset of acute abdominal symptoms. Bloody vomitus is seldom present in intussusception, while it may occur in purpura, also blood may be present in the urine in the latter disease. In the purpura the belly wall may be rigid and the abdomen distended from the onset, while this is very uncommon in intussusception. The presence of the characteristic sausage shaped tumor is very suggestive of intussusception, and an examination under an anesthetic may be of great aid in determining its presence in some cases.

LANCET.

March 29, 1913.

Eczema Oris as a Manifestation of Congenital Syphilis.—Leonard Findlay and H. F. Watson describe the lesion as being situated at one or both angles of the mouth, radiating therefrom toward the cheek, sometimes in the form of fan shaped patches. It may completely surround the mouth and implicate the face extensively. The patches are irregular and their margins may be either sharply cut or ill defined. The color is red, the hyperemia at times being very marked. As a rule the surface is dry and scaly, but there may be some discharge with the formation of crusts. The lesion frequently invades the buccal mucosa, and the lips may be swollen. There may be a similar condition about the nostrils. The disease is most obstinate and chronic. The patients do not usually present stigmata of congenital syphilis, and the proof of the nature of the lesion rests upon the results of Wassermann reactions and specific treatment. Of twenty-one cases the Wassermann reaction was positive in all but two, and in the mother of these patients the reaction was found positive. In only one case was the disease associated with the acquired form of syphilis, in all of the others the syphilis being congenital. The disease seems to be almost limited to children.

Hyoscine Morphine Anesthesia for Alcohol Injection in Neuralgia.—Wilfred Harris recommends the use of one third grain of morphine and 1/150 grain of hyoscine, given hypodermically, twenty minutes before operation. This dulls the sensation so as to prevent serious discomfort to the patient, but it still enables the operator to determine, by questioning, when he has penetrated the nerve. Under deep general anesthesia one cannot be certain that he has entered the nerve, and when no anesthetic is used the pain is often too great to permit of the successful completion of the operation By this method it is also possible to gauge the dose of alcohol so as to produce destruction of the desired region of nerve supply while avoiding the danger of injecting the alcohol back along the nerve sheath so as to reach the Gasserian ganglion with resulting destruction of this and its danger of causing corneal ulceration.

Remarks Introductory to the Clinical Study of Pulmonary Tuberculosis.—C. T. Williams has traced the heredity in 1,000 cases of pulmonary tuberculosis and finds that in twelve per cent. there was a direct history from father to son or mother to daughter. When brothers and sisters, uncles and aunts were included the percentage rose to roughly fifty. The family predisposition is much more common among women than among men; the transmission is more common through the mother than through the father; as a rule fathers seem to transmit to sons and mothers to daughters. Paternal inheritance seems to include not only a tendency to the disease, but also a resisting power which the male possesses to an extent greater than the female. A paternal inheritance is much less serious than a maternal, for the maternal inheritance is associated with an inferior resistance. Females with a family history of disease tend to be attacked as long as seven years earlier than those not so predisposed. There is no such great differ-

ence among males. Among the cases in which there is a family predisposition the disease tends to run an acute course in a larger proportion than among those in which there is no predisposition. If both parents have had the disease the risk that the children will suffer also is pronounced, double heredity exercising the greatest influence.

PRACTITIONER.

March, 1913.

Cavernous Sinus Thrombosis.—Adair Dighton reports two cases of this rare disease, one of which ended in recovery. The first patient, a child, thirteen years old, was operated upon for acute mastoiditis. A week later the temperature rose to 101° F., on the next day to 102.4°, with no obvious cause. Calomel was administered, and on the morning of the next day the temperature was normal. During that day the patient had a chill, the temperature rose to 104° F., and by the next morning she presented a typical picture of cavernous sinus thrombosis. Operation for extensive thrombosis of the lateral sinus was then performed and the patient recovered, convalescence being delayed by septic synovitis in several joints. The particular points to which Dighton calls attention are: 1. The apparent latency and then rapid onset of the disease. 2. The recovery of the cavernous sinus. He thinks that the passage of a large volume of water down the lateral sinus, jugular bulb, and jugular vein acted as a kind of suction pump and sucked the thrombus from the cavernous sinus by way of one of the petrosal sinuses. 3. The occurrence of all the septic synovitis metastases on the opposite side of the body from the mastoiditis. This he explains by a theory he brought forward, in 1911, in the NEW YORK MEDICAL JOURNAL; the patient lay on the healthy side during her illness so that all bacteria and diseased products gravitated to that side. 4. The healing of the wound with so little scar, which he attributes to the use of scarlet red. The other case was one in which a boy, six years old, had received a blow on his right temple a month before. When admitted he presented distinct symptoms of cavernous sinus thrombosis, and an operation was performed at once, but unsuccessfully. On autopsy it was found that the right frontal sinus and ethmoidal labyrinth were full of pus and communicated with the orbital cavity by means of a fistula in the orbital plate of the ethmoid. The points of special interest are: 1. The misleading history of an accident, as it led one to suspect that the condition was due to a fracture of the skull. 2. The state of development and disease of the frontal sinus in a six year old boy. 3. The part played by the anterior and posterior ethmoidal veins, and the extension of the disease to the orbit and cranial cavity.

Treatment of Adenoids and Tonsils.—E. Ward maintains that more care than is usual should be taken to avoid transforming a trivial operation into a serious one by operating without an examination of the general condition of the patient, as well as of the nasal passages and throat. Only very exceptionally should any case be operated in, unless symptoms of adenoids are present. Enucleation of tonsils is unnecessarily severe, but a general anesthetic should always be given and the condition dealt with thoroughly. More care should be taken to teach students the best way of performing this operation, for nearly every practitioner is willing to undertake it.

Ear, Nose, and Throat Work in General Practice.—Hugh P. Costobadie points out that many of the conditions that cause patients to complain of these organs depend upon some defect of general health which must be sought for and treated. Many of them are secondary to adjacent, but less apparent trouble, as when nasal catarrh is caused by a septic tonsil, a septic tonsil by carious teeth, or by a middle ear discharging through the Eustachian tube; hence a routine examination is important. No special skill is required to make a thorough examination, and many conditions met with can be recognized very readily, especially those in which a direct view can be obtained. The general health is so dependent on the upper air passages that general practitioners will be illogical if they neglect proper examination and careful treatment of nose, throat, and ear conditions.

Oxygen as an Adjuvant in General Anesthesia.—Hugh R. Phillips urges the use of oxygen in conjunction with other anesthetics for the following reasons: Cyanosis is almost entirely avoided. The anesthesia appears to be lighter, while patients seem to require less anesthetic, and recover more rapidly from its effects. Muscular relaxation is more easily maintained. Respiration never becomes embarrassed. The heart's action is stimulated, and patients usually have a better pulse at the end of an operation than at the beginning. Vomiting is much less frequent. In patients who have disease of the heart or lungs the combination gives excellent results. The danger of chloroform appears to be minimized by the addition of oxygen. In operations about the nose and mouth, for which oxygen is passed directly through chloroform, this method allows the anesthetist the use of both hands to keep the jaw in position and give intermittent assistance to the surgeon. The disadvantages consist chiefly in the extra bulk of the apparatus and the extra expense of the oxygen itself.

INDIAN MEDICAL GAZETTE.

March, 1913.

Value of Amorphous Cinchona Alkaloid in Malaria.—E. E. Waters presents the results of his observations in detail, part of them tabulated, and concludes that the amorphous alkaloid is from three to five times as effectual as quinine sulphate, and may be given in proportionately smaller doses. It has no unpleasant effects, can be given in small tablets, is rapidly effectual, and is inexpensive.

BOSTON MEDICAL AND SURGICAL JOURNAL.

April 3, 1913.

Some Factors which Influence the Excretion of Formalin in the Urine of Children and Infants taking Hexamethylenamine (Urotropin).—Fritz D. Talbot and Warren R. Sisson come to conclusions from their observations of the results produced by the administration of urotropin to children which are not altogether in agreement with the conclusions reached by other authors concern-

ing the results produced in adults. They find that all children are capable of breaking down hexamethylenamine and that consequently all excrete formaldehyde. Relatively large doses are often necessary before the excretion of formaldehyde takes place. The more acid in the urine the greater is the decomposition of urotropin and the excretion of formaldehyde, and as it has been shown by other observers that the antiseptic power of urotropin is dependent, not upon the hexamethylenamine, but upon the presence of free formaldehyde, they conclude that urotropin should not be given with drugs that cause the urine to turn alkaline. They also believe that, to insure the efficacy of the drug, specimens of urine should always be examined for the presence of free formaldehyde after the administration of urotropin.

Coxa vara, with Especial Reference to the Question of Spontaneous Recovery.—James Warren Sever defines coxa vara as a reduction of the normal angle of the neck of the femur with the shaft from an oblique toward a right, or even an acute angle. He says that rhachitic coxa vara is a frequent and concomitant condition of bow legs and knock knees, but may exist independently. In all cases there is a tendency to spontaneous recovery and, though the correction of a coexisting knock knee or bow legs may hasten the process of recovery, the condition apparently requires no treatment, and there is probably very little or no permanent disability in the average case.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

April 5, 1913.

Experimental Study of Bone Growth and the Spinal Bone Transplant.—Fred H. Albee finds that many liberties may be taken with the bone graft without impairing its success, as it has certain bacteria resisting properties. It is very probable that the amount of Haversian blood supply partly or wholly determines whether the bone graft lives as such or acts as an osteoconductive scaffold. Sufficient emphasis has not been laid upon the importance of using a sharp instrument with force in order to separate with the periosteum the embryonic layer of active osteogenetic cells situated on the periphery of the compact bone. The bone transplant apparently stimulates osteogenesis on the part of the bone into which it has been implanted. In the dog a spinal graft loses its identity at about the fourth month, as after that time the bone bridge has not the appearance of having originated in that way. Bone taken from another species, such as the sheep, did not unite to the recipient bone of the dog, although asepsis had been preserved, moving the unreliability of the procedure rather than that sheep's bone will not unite to dog's bone as a graft. By means of a bone graft a bone bridge between different vertebræ was found, although breaking down the spinous processes, splitting the spinous processes in halves, and the insertion of periosteal bridges all failed to produce a continuous bone bridge. Bone transplants taken from the spinous process showed evidence of less osteogenesis than when taken from a long bone (e. g., the ulna). Bone denuded of periosteum proved equally satisfactory to bone grafts on which the periosteum remained, but their persistency was not tested. As the metal splint produces bone absorption and favors infection the bone graft should be used when possible, on account of its germ resisting property and its early adhesion by bone growth to the bones. The periosteum to be actively osteogenetic should be removed by a sharp elevator, making the cleavage deep and including the osteogenetic layer of cells; otherwise it will only constitute a connective tissue limiting membrane, without hopes of much osteogenesis. Periosteum and marrow substance on the bone graft aid in establishing an early and more abundant blood supply from recipient bone to the transplant.

Treatment of Gonorrheal and Other Infections with Digestive Bacterial Extracts.—J. O. Hirschfelder observes that the use of the digestive bacterial extract of the gonococcus in gonorrhea of the male, both acute and chronic, favorable results apparently followed, but were not absolutely positive. In the female the evidence was somewhat stronger, but still not conclusive. It may be reasonably assumed that when the gonococci are present in the urethra, any antibody formed in the blood would have difficulty in reaching them, and one would be prepared for a failure of the remedy; marked and striking effects, however, were produced in the resistant organs of prostitutes. In systemic gonorrheal affections more favorable results have been obtained. Of seven patients with epididymitis, under the care of several observers, all but two rapidly recovered. Seven patients with gonorrheal rheumatism received this treatment, and all recovered and remained well. In every instance the improvement was rapid and in most was uninterrupted. In three cases of typhoid a digestive extract of the typhoid bacilli was injected, with apparent good result. In two cases of articular rheumatism an extract made from the culture of an endocarditis streptococcus was injected, and improvement followed in both cases. The writer hopes that the principle of the production of antibodies by the use of digestive extracts of the different microorganisms may be proved to be a general one.

Acute Arthritis among Negro Laborers on the Panama Canal.—Walter Baetz found that ninety-one per cent. of the acute arthritides admitted to the male negro wards during the past year were caused by venereal disease. Syphilitic etiology was proved in sixty-three per cent., the Wassermann test being positive in 93.6 per cent. of these cases. An intensive mixed treatment, carried to the point of tolerance, enabled these men to return to work in an average of 18.8 days. Gonorrheal origin was proved in twenty-eight per cent. of the cases, and in these vaccine treatment yielded, in the great majority of cases, very good, sometimes brilliant results. In no case did an unfavorable result follow this treatment. The average number of days under treatment was twenty-four. All other types of arthritis were so few as to be practically negligible. In none of the one hundred cases was acute articular rheumatism met, nor was acute or chronic endocarditis recognized.

Rabies: a Pathognomonic Sign Generally Overlooked.—M. B. Wesson calls attention to the characteristic development of the paralysis of

rabies noted in a series of animals, including man, dog, hog, guineapigs, and rabbits. The paralysis first appeared in the "left hind leg," and this in a short time developed into a left hemiplegia, the paralysis becoming general. In an animal that has suddenly become nervous and irritable, the development of a weakness in the left hind leg, without any apparent reason, is sufficient to warrant a tentative diagnosis of rabies.

Preparation and Employment of a Potent Polyvalent Antistaphylococcic Serum.—A. Thomas's antistaphylococcus serum, containing eighteen strains of *Micrococcus aureus*, possessed direct therapeutic efficiency in a series of conditions, both general and local, due to infections by *Micrococcus aureus*. The writer holds that biological therapy by a potent polyvalent antistaphylococcic serum is more effective in the presence of a staphylococcic bacteriemia than is the corresponding autogenous bacterin. It is to be preferred over bacterin in the treatment of furuncles and carbuncles on account of the more immediate and decisive effects of the serum; on the other hand, if we supplement the serum with two or three inoculations of the autogenous bacterin we confer a more intensive and lasting immunity in the individual. No attempt was made to standardize the antiserum with respect to standard units. Therapeutic failure or inefficiency of many sera is referable to the deficiency of the immune body content of that particular serum—an improper or incomplete immunization of the animal used in the production of the serum.

MEDICAL RECORD.

April 5, 1913.

Surgical Conditions of the Abdomen in Their Relation to Life Expectation.—Morris B. Miller opens the discussion of the topics presented by urging with emphasis a greater deligence and care in the methods employed to arrive at a sound conclusion as to insurability, first place being given to the value of a good history. Appendicitis, as far as its acute forms are concerned, is obviously not a subject for consideration by the life insurance examiner, nevertheless the question may arise as to the insurability of the individual who has had an attack of acute appendicitis, but who has recovered without operation and in whom there may or may not be indications of appendicular irritation, and again the individual who has definite signs of local tenderness at the time of the examination or whose history shows transitory attacks of so called appendicular colic, and, finally, the individual who has undergone operation. The first cannot be considered a good risk by reason of the great liability to a recurrence of the trouble. The second class has practically no mortality, but the general impairment of health due to the digestive derangements and to the associated mental perturbation make an operation desirable. As to the third class, the postoperation cases, in a healthy person operated during an interval or at the beginning of an acute attack, the wound being closed without drainage and with no complications the applicant may be considered acceptable three months after the operation, as beyond that time incisional hernia is not likely to develop. In cases where abscess, or general or diffuse peritonitis has occurred, necessitating drainage, there is a distinct liability to acute obstruction any time within two years, and also to incisional hernia, which is apt to be dangerously strangulated. In these cases, if after two years no obstructive or painful phenomena have occurred, no hernia is present, and the appendix has been entirely removed, acceptance may be advised. Inguinal hernia of unusual size, or one that frequently slips away from the truss, or one that is reducible only with effort and pain, or one that has omental or intestinal adhesions in the sac or to the margins of the hernial opening, would disqualify the applicant. Maldescent of the testicle, when associated with hernia, renders the subject uninsurable on account of the well known tendency of the undescended testicle to sarcoma, as well as for other reasons. Femoral hernia is more serious than inguinal hernia, and other forms (umbilical, incisional, interstitial, sciatic, gluteal, etc.) should always be cause for declination. The modern radical cure may be followed by relapse (five to eight per cent.) but usually not after six months. Gallbladder disease in its relation to infection, and ulcer of the stomach or duodenum are worthy of thought in connection with insurance. The great majority of individuals operated upon for gallstones, who have had no untoward symptoms after a reasonable lapse of time, are acceptable for insurance, but cases of cholecystitis without gallstones operated in, especially if there are other visceral lesions, should be looked upon with great suspicion. The presence of peptic ulcer, acute or latent, is a sufficient ground for rejection, by reason of the dangers of subsequent hemorrhages, leading to anemia or sudden death, perforation, perigastric adhesions, pyloric stenosis or cicatricial distortion of the stomach, the liability in these cases (twenty per cent.) of the development of pulmonary tuberculosis and, finally, because of the close relationship of chronic ulcer to carcinoma. The history of an acute ulcer in early life, followed by a perfect recovery, as shown by unimpaired gastric function, may, however, be ignored. It should not be forgotten that over fifty per cent. of medically cured cases recur. The judgment may be favorable in cases operated in, if a full history of the nature of the lesion and of the operation is obtained, if there have been no symptoms and if three years have elapsed after evidence of full recovery.

Vapor Anesthesia and Its Advantages.—Henry C. Falk, after the use of the Gwathmey vapor apparatus for a year, details many of the advantages accruing from its use. Preceding anesthesia, and one hour before operation, one eighth grain morphine, and one half hour later another one eighth plus 1/150 atropine, are administered hypodermically. Owing to this preliminary medication, the patient is in a tranquil state of mind and takes the anesthetic quietly with lessened psychic shock. As the warmed ether vapor is turned on the smothering sensation, coughing, or laryngeal spasm, which occurs with cold ether, is absent, and there is usually no stage of excitement. The respirations, pulse, and color are normal, and the patient is ready for operation in from five to ten minutes. By this apparatus the percentage of air and ether can be kept at an even plane, and increased or diminished at will. Sponges, suction apparatus, and other means for the removal of saliva and mucus from the throat, are

unnecessary, as the warm vapor does not increase the salivary secretion. There is little or no bronchial irritation, patients with chronic lung disease doing as well with the warmed ether as with cold chloroform. There is a more unobstructed field for the operator working on the head and neck or on the nose and throat; in the latter the use of the Gwathmey-Ferguson mouth gag, allowing even continuous narcosis with the anesthetist out of the way of the operator and his assistant; in tonsillectomy a suction apparatus is added. Toward the end of narcosis, a large amount of warm air is pumped into the mask, and this hastens the recovery of consciousness and reduces postoperative nausea, the latter being absent in about sixty to seventy per cent. of all cases. The postanesthetic delirium or "ether jag" is absent. Continuous narcosis can be maintained by the use of 2.5 to three ounces of ether an hour. Postoperative albuminuria is present in thirty per cent. of patients and three to four per cent, of hyaline casts, compared with ninety-five per cent. of albuminuria and seventy per cent. having casts by the use of former methods.

ARCHIVES OF INTERNAL MEDICINE.

March, 1913.

Studies of Renal Function in Renal, Cardiorenal, and Cardiac Diseases.—L. G. Rowntree and R. Fitz investigated the function of the kidneys in fifty-seven patients, by means of the following tests: Phenolsulphonephthalein, lactose, salt, water, potassium iodide, and the accumulation in the blood of uncoagulable nitrogen. The renal function can unquestionably be determined much more accurately with these tests, they conclude, than through ordinary clinical studies alone. For general use the phthalein test is of more value prognostically than any other single test; diagnostically, it is of value in cardiorenal disease for determining the relative responsibility of the heart and kidney for the clinical condition. The lactose test is of great value for determining the existence of abnormal renal function; the suppression of lactose excretion may also be of considerable value prognostically. The salt test is of no value alone, though it may prove useful in conjunction with others. The amount of water excreted in pure nephritis in response to sodium chloride stimulation may be of value, but the potassium iodide test is practically useless. In cardiorenal disease one can determine whether stasis or nephritis is the more important factor, most readily by repeated phthalein tests, though the determination of incoagulable nitrogen in the blood may also be of value. It is also possible—most readily with the lactose and phthalein tests—to diagnosticate the presence or absence of impaired renal function in cases where clinically nephritis is suggested.

Effects of Administration of Iodine in Thyroid Carcinoma.—D. Marine and A. A. Johnson gave iodides to three cases of thyroid carcinoma—two human and one canine—and studied the question of comparative storage of iodine in the tumor and nontumor thyroid tissues, both in material removed at operation and that obtained at autopsy. The cancer tissue was found to exhibit practically no capacity for iodine retention, in contrast with nontumor thyroid tissue, which showed a marked capacity for storing iodine.

Experimental Observations on the Coagulation of Oxalated Plasma, with Study of Purpura.—J. H. Austin and O. H. P. Pepper suggest that in the clinical study of coagulation, not only should a complete blood count and enumeration of the blood platelets be made, and the coagulation time of a drop of blood from the finger determined with one of the clinical coagulometers, but certain other simple tests performed, which the authors outline, to ascertain whether there is a deficiency of calcium or of fibrinogen in the blood and whether the prothrombin present is inactive because of being bound by antithrombin. They report cases of purpura, jaundice, and anemia, as well as controls, in which these tests were carried out. Their studies in purpura, in which normal coagulation was observed, lead them to state that the factor determining purpura is not constantly involved in coagulation as studied in oxalated plasma. No method of study has as yet offered a satisfactory explanation of purpura.

Primary Carcinoma of the Larger Bronchi.—C. V. Weller was able to collect ninety well authenticated cases of this condition, and considers it comparatively frequent. The maximum of cases was found in the age period from fifty-six to sixty years inclusive. In eighty-seven cases, seventy were males. The data in regard to etiology are meagre. Among fifty-five cases, forty-five of the neoplasms were alveolar, acinar, or adenomatous, five medullary, three scirrhous, and two carcinoma simplex. Ante mortem diagnosis is often possible. The chief symptoms, in the order of their frequency are cough, progressive dyspnea, hemoptysis of variable degree, pain in the chest, shoulder, or arm, and pressure phenomena, such as dilated veins of the head and thorax, edema, recurrent laryngeal paralysis, dysphagia, etc. Fever and night sweats are nearly always absent. The physical signs vary with the extent of the neoplasm, the degree of bronchial stenosis, and complicating lung conditions. Bronchoscopy and especially radioscopy are of diagnostic help. Although in the past the diagnosis of bronchial carcinoma has been considered to be chiefly of prognostic value, the condition is now becoming an operable one; its early recognition is obviously essential.

ARCHIVES OF OPHTHALMOLOGY.

March, 1913.

Clinical and Experimental Researches on Intraocular Drainage.—M. J. Schoenberg thus summarizes the results of his studies: The degree of intraocular pressure depends in a great measure on the integrity of the draining system of the eye, and the examination of the rate of ocular drainage is of more importance than the simple measurement of the intraocular pressure. The rate of ocular drainage can be measured by the aid of the Schioetz tonometer in animal and human eyes with a certain amount of accuracy. Normal eyes have an ocular pressure and a rate of ocular drainage varying within relatively wide limits; glaucomatous eyes have some impairment in the function of the draining system. It is safe to suppose that in incipient or prodromal glaucoma the draining

system may be undergoing slight alterations which, though too small to raise the intraocular pressure above the upper limit of the normal, are yet sufficient to be discernible by the measurement of the rate of ocular drainage. There are patients with eyes in a condition of latent glaucoma in which the intraocular pressure is within normal limits—about fifteen to twenty-six mm. Hg. The diagnosis in such cases can be cleared up to a certain extent by the measurement of the rate of ocular drainage.

Effect of Chronic Glaucoma on the Central Retinal Vessels.—F. H. Verhoeff maintains that secondary glaucoma always produces, sooner or later, intravasculitis of the central retinal vessels leading ultimately to complete obstruction. The same variety of changes are seen as in cases of primary obstruction of these vessels. Thrombosis does not occur. Dissecting aneurysms not infrequently occur in both the vein and the artery, producing complicated appearances which have been mistaken for canalized thrombi. Obstruction of the central vein due to secondary glaucoma, probably owing to its slow development, seldom if ever produces the intense hemorrhagic retinitis often seen after primary obstruction of this vessel. In chronic primary glaucoma, intravasculitis of the central vessels, where not coincidental, is the result, not the cause, of the increased intraocular pressure. In the majority of cases it probably does not reach a sufficiently high degree to impair vision until the latter is already lost from other causes.

INTERSTATE MEDICAL JOURNAL.

March, 1913.

Abderhalden's Serodiagnosis of Pregnancy and Its Practical Application.—Henry Schwarz calls attention to the work of Emil Abderhalden, professor of physiology in the University of Halle, and to a number of articles describing the technic for a serodiagnosis of pregnancy and its results. Abderhalden has proved that there is present in the blood of pregnant women a proteolytic ferment which causes cleavage of placental albumin and of placental peptone. This ferment is not present in the blood of nonpregnant women. Two methods may be used to demonstrate the presence or absence of this enzyme; the dialyzation method and the optic method. In the dialyzation method about one gramme of placental albumin is placed into a small dialyzer with two or three c. c. of serum; for the outer fluid from fifteen to twenty c. c. of distilled water are used. This dialyzation apparatus is incubated for from sixteen to twenty-four hours, when the outer fluid is tested by color reaction for the presence of peptone. The experimenter at first used the biurette reaction, which, as it had its limitations and required a certain experience, was replaced by triketohydrindenhydrate or ninhydrin. For each test with presumably pregnant serum, a control test must be started. There are three possibilities in the results of this test: The dialysate of the test shows the characteristic blue color, while that of the control remains colorless (the person whose blood has been tested is pregnant); the dialysates of test and of control remain colorless (showing nonpregnant serum); the dialysates of test and control turn blue (there is some error and the test must be repeated after the error has been discovered and eliminated). The optic method requires expensive apparatus, but is simple. A mixture containing one c. c. of a ten per cent. solution of placental peptone and of two c. c. of serum is placed in a very small polarization tube, and the initial rotation is read off in the polariscope. The tube is now placed into an incubator and the change in rotation is read off from time to time during the next thirty-six hours. The maximum change in rotation with nonpregnant serum never exceeds 0.03°, while with pregnant serum the change amounted to from 0.05° to 0.20° and more.

Stone in the Antrum of Highmore.—Norman H. Carson reports this unique case, as a careful search of medical literature revealed none like it. The calculus was made up almost entirely of calcium phosphate and was found in the course of an operation for a squamous celled epithelioma involving the antrum of Highmore.

The Physiology of Fainting.—Logan Clendening has had two interesting experiences during the past two years which correlate each other and throws a possible light upon the physiology of fainting. In both instances, during a life insurance examination, the applicant has fainted; once while the pulse was being counted, and once while the blood pressure was being taken. In the first case the applicant was standing beside the writer's desk when his pulse was being counted. The writer had counted about half a minute when the pulse, which had previously been large, rapid, and bounding, suddenly stopped. So sudden was the transition that the writer thought the artery had rolled from beneath his fingers, and as he sought to recover it, he felt a tug upon his arm and looked up to find the young man with blanched face and quivering eyelids swaying from side to side and finally tumbling in a heap at his feet. In the second case, the blood pressure was being estimated, when suddenly the mercurial column of the sphygmomanometer fell to 60 mm. and no pulse was felt; the applicant fainted and became unconscious. From these two observations the writer concludes that in syncope the heart, for a brief period, entirely stops beating; that in consequence there is an enormous fall of general blood pressure, which, according to the researches of Hill, would cause an immediate cerebral anemia and loss of consciousness.

Amebic Dysentery, with Special Reference to Ipecac Treatment.—Jesse S. Myer and Jerome E. Cook report six cases of amebic dysentery and present a brief review of the status of the ipecac treatment. While the number of cases (six) is small, the uniformly prompt and lasting results obtained by the writers in this disease so notoriously resistant to treatment other than ipecac is worthy of notice. Very large doses are not always necessary to secure therapeutic results, as proved in the earlier cases of the writers, though perhaps they are desirable. The drug is well borne if administered with a salol coating.

NEW YORK STATE JOURNAL OF MEDICINE

March, 1913.

Use of Fetal Serum to Cause the Onset of Labor.—A. J. Rongy reviews the experiments of van der Heide and of Sauerbruch and Heyde on the action of fetal blood serum as a means of bringing on labor in animals and in the human fe-

male. In four women van der Heide succeeded in inducing labor by the injection of from two to 17.5 c. c. of fetal serum, intravenously. In three others the injections induced transient pains, but failed to bring on labor. In six women the serum was effective in reinstituting labor in patients in whom had developed uterine inertia. Eight women showed no effect of the injections. Rongy injected fetal serum intravenously into nineteen women not in labor and thus induced labor in six patients who were at least from ten to eighteen days before term. In two cases of inertia the serum was effective. Seven cases were wholly negative as far as results in the direction of induction of labor were concerned. In the experience of both van der Heide and of Rongy the injection of the serum is quite harmless, though it usually induces some rise of temperature and pulse rate together with nausea and even vomiting. Rongy saw one remarkable instance in which the serum was injected to induce labor in an eclamptic woman, and the symptoms of threatened eclampsia at once disappeared and did not return. He finds that some of the failures which he had with the serum were probably due to the use of too large a dose, for experience showed that a small dose, followed in four or five hours by a larger dose, is the most effective mode of use, while the injection of a large dose at one time often failed to induce uterine contractions. The initial dose must be determined for each patient and is still not sufficiently worked out. These results do not entirely fit in with the conception that the onset of labor is an anaphylactic response, but in many ways they do seem to confirm the idea that the cause of labor is a deluging of the maternal system with fetal products. An interesting observation made in the course of the investigation is that a woman may have uterine contractions of considerable force and duration and experience no pain. In fact the onset of pain seems to depend upon the impingement of the presenting part of the fetus upon the maternal bony pelvis.

Indications for Abdominal Cæsarean Section, with the Technic of the Operation and Analysis of 352 Cases.—Ross McPherson sums up his analysis thus: 1. Cæsarean section is the preferred method of delivery under conditions where a viable child may not be delivered by normal ways and provided the mother can take the surgical risk. 2. The mortality statistics show that early examination, freedom from previous manipulation and from other efforts to deliver are important points for the best results. 3. The fact that the patient has been some time in labor need not preclude the efficiency of the operation. 4. Conditions for this operation should be satisfactory, as it requires a particular technic with skilled assistants for the best results. 5. The most important points of the technic are: A. High incision; b, nondelivery of the uterus from the abdominal cavity; c, the absence of any method of constriction to prevent bleeding; d, a special method of suture. 6. Given such conditions as are demanded for the technic of the operation, and with the elimination of those patients who would die under any method of treatment, we may hope for a mortality not to exceed two per cent.

Proceedings of Societies.

WESTERN SURGICAL ASSOCIATION.

Twenty-second Annual Meeting, Held at Cincinnati, Ohio, December 20 and 21, 1912.

The President, Dr. L. L. McArthur, Chicago, in the Chair.

Etiology of Ileal Kink, Circumcecal Membrane, and Cecum Mobility.—Dr. F. Gregory Connell, of Oshkosh, Wisconsin, concluded that: 1. Anomalies of development offered a rational explanation for these conditions. 2. Coincident or resultant inflammation might cause confusion. 3. Describing the embryological changes in the ileocecal region under the single term "rotation" likewise caused confusion. 4. Such changes were: Migration, rotation, and fixation, one or more of which might be imperfect. 5. The Jackson or circumcolic membrane might be due to excessive rotation, delayed migration, early or anomalous fixation. 6. The Lane kink might be due to excessive or anomalous fixation. 7. Cæcum mobile was due to an absence of fixation.

The Fetal Peritoneal Folds and Their Relationship to Jackson's Membrane and Lane's Kink.—Dr. Joseph Rilus Eastman, of Indianapolis, called attention to the striking similarity of the fetal peritoneal fold described by Jonnesco and Juvara, and designated by them "the parietocolic fold," to the adult peritoneal anomaly described by Jackson as membranous pericolitis and generally known as "Jackson's membrane." Further attention was called to the probable causal relationship between the bloodless fold described by Treves and a pocketlike anomalous peritoneal reflection which was not rare in the adult, and which passed from the mural peritoneum upon the right side quite low down, extending upward and inward over the caput coli and vermiform appendix to be attached to the last two or three inches of the ileum, and to the peritoneum of the caput coli. It formed the boundary of a precolic fossa in which the cecal head and appendix might rest as in a pocket. It was likely that the caput coli with the appendix were, in not rare instances during operations for appendicitis, shelled out of this peritoneal pocket, the peritoneal fold, that is the bloodless fold of Treves which formed the pocket being looked upon by the operator as an affair of adhesion formation. Moreover, although conceptions of Lane's ileopelvic band, the structure to which was ascribed an important part in the causation of Lane's kink, were somewhat varying, it might be well in discussing the nature and origin of this band to recall that Douglas Reid, of the University of Cambridge, had described under the name of "genitomesenteric fold," a rather common fetal fold of peritoneum which passed from the terminal portion of the ileum into the pelvis. Concerning this genitomesenteric fold, which might be found readily in a surprisingly large percentage of fetuses after the seventh month, or even after birth at term, the question might be raised as to whether it was not related to angulations or gravitations or other deformities of the terminal ileum to which it was attached.

The parietocolic fold of Jonnesco and Juvara in most cases arose from the peritoneum at the left or inner side of the ascending colon, passing over the anterior aspect of the ascending colon in an upward slanting direction. It was attached to the parietal peritoneum at the right of the ascending colon. It might adhere to the anterior and lateral aspects of the colon. He ascribed to this fetal fold practically the same relations as were presented by the parietocolic fold when found in the adult.

The fold which was described by Douglas Reid and called by him the genitomesenteric fold passed from the mesentery of the last part of the ileum down into the pelvis, being attached below to the genital gland. It would be seen that it had a secondary connection with the ileum and through the peritoneum of the mesoappendix with the appendix itself, a connection which was perhaps responsible for the frequent association of appendicitis and oophoritis. He had seen this fold in the adult. By lifting the last part of the ileum upward, a thin fold of peritoneum which was quite loose could readily be seen passing from the mesentery of the last part of the ileum over the brim of the pelvis to the region of the ovary. There was no sharp border of this fold upon the right side. It spread out on

the right into a rather narrow fold of Treves. Reid had described this genitomesenteric fold as passing under the appendix, whereas the fold of Treves passed over the caput coli and appendix. In the speaker's cases the inner or left border of the bloodless fold of Treves had ended in each case below in the genital gland in the fetus at the ovary in the female after birth, and at the internal abdominal ring in the male at term. This was not seen as it was observed by Reid. Certainly it was not noticed as a separate distinct fold, but rather as the inner prominent edge of the bloodless fold of Treves, passing from the terminal ileum to the genital gland. It was this genitomesenteric fold of Reid, or the prominent inner border of the fold of Treves as the case might be, which corresponded in its position and attachments to the ileopelvic band of Lane. The relationship between the fetal fold and Lane's band was, perhaps, only suppositional, but it seemed not unlikely that they were identical.

Concerning the origin of Jonnesco's fold, it might be said that several succeeding stages of its formation indicated that adhesions formed between the cecum and parietal peritoneum, while the cecum was still subhepatic. The subsequent descent with torsion or rolling inward upon the long axis drew the mural peritoneum over the ascending colon in a slanting direction.

Relation of Appendicitis, Mucous Colitis, and Membranous Pericolitis.—Dr. A. E. BENJAMIN, of Minneapolis, drew the following conclusions: 1. The colon bacillus was a most deadly enemy of the human race. 2. Owing to the dietary habits and the upright posture assumed by man, the propagation of the bacillus was favored. 3. The congenital body form and the imperfect development of the large intestine, as well as insufficient support and pressure of clothing, favored visceroptosis, and visceroptosis favored stasis. Repeated attacks of colitis in children might terminate in a chronic form of the disease manifested in later life. 4. Intestinal stasis caused a multiplication of colon bacilli within the colon. 5. The weakest portion of the colon, namely, the cecum, owing to its anatomical location, was the natural receptacle for retained feces, mucus, bacilli, and other contents of the bowel. 6. The two fixed points, namely, hepatic and splenic flexures, inhibited fecal circulation, and where there were kinks, resulting stasis occurred. 7. The reverse peristaltic waves and the uphill course of the first part of the colon were prime factors in the production of stasis in the cecum. 8. When stasis and intercolonic tension existed in the presence of retained infectious microorganisms, the law of osmosis was put in operation and a transmigration of these organisms through the walls of a thinned out colon occurred. 9. There was always a reaction on the part of tissue thus invaded and barriers offered to protect surrounding structures. 10. Without the colon these barriers were manifest in the form of a veillike membrane radiating from the parietal peritoneum to and over the area of the colon most affected. 11. This membrane might not be placed uniformly over the colon or cecum, but often in an imperfect and crippling manner. 12. The pressure of these bands might cause degeneration and scarring of the intestinal wall with contraction, resulting in thick bands or dense adhesions which produced obstruction and secondary stasis. 13. When these fibres hampered the action of the large gut they were a menace to the health of the individual and must be removed. 14. The appendix was often caught in this veillike membrane or dense bands with resulting constriction and degeneration of its walls. 15. When the freedom of action of the appendix was thus interfered with, bacteria were retained and further degeneration and infection resulted. Acute attacks of appendicitis might supervene following chronic symptoms of the disease. 16. A chronic colitis sooner or later might result in membranous pericolitis and demand surgical intervention to relieve imprisoned or restrained portions of the colon or appendix. The results of such an operation depended to a great extent upon the inauguration of consistent dietary and general hygienic measures following the operation. 17. Buttonhole incisions for appendicitis should seldom, if ever, be employed. 18. Surgeons must take a more comprehensive view of diseases of the abdomen, especially of the right side, and cease to focus their attention on the appendix alone. 19. A careful observation must be made of all the abdominal organs at the time of the operation, and a general view taken with a clear understanding of the clinical symptoms and careful investigation of the pathological conditions requiring attention, and with an intelligent interpretation of these their results would be quite satisfactory.

Dr. VAN BUREN KNOTT, of Sioux City, Iowa, said he had thought that the so called Jackson membrane was more a congenital anomaly than a pathological entity. He had encountered it many times when the abdomen was opened for any pathological condition, when no symptoms existed which could be attributed to the presence of the membrane.

Dr. W. D. HAINES, of Cincinnati, said there was a definite and known cause for colitis. It was an infection of the intestinal wall, and it was the same as other mucous lined surfaces when they became infected, the difference being chiefly in the mechanics of the part, whether it was the gallbladder, the appendix, or gut itself. If one was not absolutely sure of the diagnosis before operation, the incision should be sufficiently large to permit one to see and act intelligently.

Dr. JABEZ N. JACKSON, of Kansas City, Mo., said the main thing he had endeavored to force upon the profession was the recognition of a pathological or abnormal condition, whether it was congenital, inflammatory, or what not in its origin, a condition which was found about the right side of the colon in a very definite percentage of the cases, and a condition which was clearly definable. It was a clinical entity which presented an absolutely characteristic train of symptoms.

Dr. W. W. GRANT, of Denver, reported a most interesting case in which there was a condition of the appendix without local symptoms other than those referable to the stomach. While examination showed hyperacidity of the stomach, an exploratory operation showed absolutely no disease of the stomach or gallbladder, but the tip of the appendix was covered with the so called Jackson membrane, looking exactly as it did in the fetus, except that there was a great deal of congestion and redness of the bloodvessels covering the cecum. Removal of the appendix cured this patient in two months.

Dr. DANIEL N. EISENDRATH, of Chicago, suggested that cases be watched for the next two years, observations at the operating table made, and cases followed along to see how much benefit had been derived from the various methods of operation, and how much need there was for any operation in a great many of these conditions. He had made notes in a great many cases of so called movable cecum, of ptosis of the ascending colon and transverse colon, and he had been following them up. A chart exhibited contradicted what Doctor Jackson had said, namely, that the Jackson membrane did not form in ptotic colon. This picture showed that the cecum lay between the bladder and the right pelvic wall. Doctor Jackson had pointed out that the circumcolic membrane covered the ascending colon down to the cecum. In these cases there was absolutely no symptom referable to the ptotic condition of the colon. The entire ascending colon and cecum were in the condition that had been described as cæcum mobile or complete ptosis of the cecum.

Dr. WARREN A. DENIS, of St. Paul, thought this question could be definitely settled by means of cooperative work and by making definite records of the conditions found in the various cases. If all recorded the actual conditions found in children operated upon, they could determine the relative frequency of this membrane in children. A certain number of cases would be operated in later in life, and in some of them this membrane would develop, and perhaps in some of them it would not, but they could reach a definite conclusion only by having a good many men work together.

Retrocecal Appendicitis.—Dr. JABEZ N. JACKSON, of Kansas City, Mo., described four separate anatomical subvarieties of the general postcecal type. 1. The appendix, possessing its usual mesentery, was distinctive only in the fact that it ran upward along the outer side of the colon which overhung and confined it in the limited peritoneal space external to the colon. 2. Another type ran upward external to the colon under cover of the peritoneum of the posterior parieties, which formed its investment, usually incomplete, on its posterior circumference, and even though complete not furnishing a mesentery proper. 3. Again, he had found the appendix running up along the external wall of the colon itself and invested by its proper

tunic and likewise without mesentery. 4. In the fourth type the appendix ran upward directly behind the colon beneath which it was buried in connective tissue entirely, and had no direct peritoneal investment whatsoever.

In the retroperitoneal type we might permit embolic infection of the liver with multiple abscesses entirely beyond any hope of relief by surgical means or otherwise. He would, therefore, emphasize the need of early diagnosis and early removal of the appendix as particularly indicated in this anatomical type of appendix.

Dr. W. W. Grant, of Denver, stated that in a paper, Retrocecal Appendicitis, read before the Colorado State Medical Society, in 1903, he called attention to a symptom not mentioned by the essayist in speaking of the symptomatology, namely, a tender point two inches above, on an intersecting line directed upward from McBurney's point and from the umbilicus. In these cases of postcolonic appendicitis, without preliminary symptoms, one would find this to be the most distinctly tender point. A prompt operation in the class of cases described with drainage through the lumbar region would cure a large proportion of them.

Dr. Walter B. Dorsett, of St. Louis, said he was particularly interested in Doctor Jackson's classic description of this condition, but mostly in regard to the necessity for lumbar drainage even after we had opened anteriorly. Three such cases had come under his observation. In these he was fortunate enough to make a diagnosis of retrocecal appendicitis and opened, first, through the lumbar region, drained, and then went in afterward in front and removed the appendix, for the reason that the appendix was very hard. He removed it through a lumbar incision. It was worth while to consider drainage before the ablation of the appendix.

Gunshot Wounds of the Abdomen.—Dr. Maurice Kahn, of Leadville, stated that of forty-one cases of gunshot wounds seen in civil practice, thirteen (thirty-one per cent.) were of the head, eight (nineteen per cent.) of the chest, and thirteen (thirty-one per cent.) of the abdomen. He cautioned against dogmatism in asserting that portions of the body distant from the wound of entry were not involved, as remote organs were occasionally injured. He cited a rare case of his own: A boy was accidentally shot with a 22 calibre rifle, the bullet entering the external aspect of the right thigh at its middle third, and death from peritonitis resulted on the fourth day. He maintained that the soft tissues of the abdomen were incapable of deflecting a bullet, hence a bullet must traverse that cavity in the straight line of its projection. On account of the danger of hemorrhage and the rapid absorption in the upper abdomen, he also combated the universal belief that wounds of the lower abdomen were attended with a higher mortality rate than were those of the upper abdomen. Despite the fact that army statistics show that conservative treatment was the more successful in war, and that it was possible for a bullet to traverse the abdominal cavity without visceral perforation, and he cited one case of his own in which this occurred, nevertheless, in every case of penetration of the abdomen by a bullet, multiple perforations of the viscera were to be assumed and prompt surgical exploration was demanded. The symptoms usually mentioned were not those of perforation, but were signs of hemorrhage or peritonitis. Given a case with indications of probable involvement of the abdomen, one should not wait for symptoms, but should proceed at once with the operation. Needlessly long incisions, evisceration, rough handling of the gut, and long exposure were to be condemned; however, much time might be wasted by attempting a thorough search through an insufficient opening; therefore, he always made an opening sufficiently large to permit rapid work regardless of its length. Also, in the presence of a belly full of blood, he turned out intestines abundantly to expedite finding the source of the hemorrhage, which, if profuse, arose from the solid viscera, mesentery, omentum, or large vessels, as wounds of the hollow viscera bled but slightly. Trimming the bruised edges of intestinal wounds required time, which might be of great import, and was unnecessary, as the edges could be safely infolded. On account of the tonically contracted bowel, care should be exercised that the bight of the suture was no deeper than was intended. Thorough exploration for distant perforations was urged, as many cases had been lost by neglecting to repair all wounds. The general principles governing drainage in abdominal conditions would determine one's procedure in a given case. When in doubt it was safer to drain. Of thirteen cases, seven were operated in. Excluding one, which involved the thorax and abdomen, and which was fatal through secondary pulmonary hemorrhage, this left six pure abdominal cases with intestinal perforations operated in within eight hours of the accident; five ended in recovery, and one was fatal, a mortality of seventeen per cent.

Dr. W. W. Grant, of Denver, said, in reference to the diagnosis, that if we knew the point of entrance of the bullet and its exit, we could tell with some degree of accuracy what course it had pursued; but often there was no exit; the bullet was lodged in the body, and under these circumstances and conditions, he suggested that the x ray would locate the bullet, and knowing its entrance, even if we did not know its exit, we should know pretty well what course it had pursued, and this could often be done within an hour or two. It was a fact, every hour, after about four hours, increased the mortality from these wounds without operation. Therefore, operation in every case of wound from a bullet should be undertaken. If there had been no wound of the intestine or stomach, the patient would not die from an exploratory operation. The first consideration was hemorrhage and not extravasation, because it was the hemorrhage that produced shock; it was the hemorrhage that produced immediate death and not peritonitis, so that the first consideration was to stop the hemorrhage.

Intussusception.—Dr. S. C. Beede, of David City, Nebraska, said the recurrence of intussusception shortly after its reduction had been sufficiently frequent to make it necessary that the operation performed include such a fixation of the bowel or shortening of its mesentery as would prevent recurrence at this site. Whatever might finally be demonstrated to be the actual cause of death in obstruction of the bowels, experience had shown that drainage of the stagnant fluid in the gut above the point of obstruction promoted the recovery of the patient. Advanced cases of intussusception formed no exception to this rule, and in them provision for such drainage must be made. Threading the gut on a glass tube introduced into it through an incision in its lumen was unclean, time consuming, and involved more visceral manipulation than was admissible in our ideal operation. The method of stitching into the gut a large rubber catheter with rows of purse-string sutures after the manner of a Senn gastrostomy, as repeatedly described by a former president of this association, was decidedly superior and its principle should be included.

Important as this drainage might be, it was of still greater moment that gangrenous tissue should be removed from the field of absorption. When it was present, resection of the bowel must be done; and as it frequently existed in the irreducible invagination, whether or not it showed upon inspection, it followed that irreducible intussusceptions must always be exercised, and the expedient of anastomosing the gut above with that below the obstruction or of simple enterostomy must never be adopted.

The speaker described a technic which best met the indications. It was adaptation of well known methods with some variations that had seemed of sufficient value in his own work to warrant their presentation.

Dr. Daniel N. Eisendrath, of Chicago, said that anyone who had operated in a case of intussusception in an infant and had seen the degree of shock which these children suffered, knew that the greatest amount of operative interference was the thing that would give the highest mortality. Where it was impossible to pull the intestines apart, it was much better, if the child was in any degree of shock, to bring the intussuscepted part out through an abdominal incision, and do an enterostomy to tide the child over for two or three weeks, and then do resection at leisure when the child was in good condition.

Dr. Clifford U. Collins, of Peoria, said that these cases should be operated in inside of twelve hours if we expected to decrease the mortality very much. The general practitioner must be educated to bring these cases to the surgeon sooner than he had been doing.

Dr. William D. Haggard, of Nashville, said that the contention of the essayist, that enterostomy was extremely valuable in these cases as an adjunct, was sound practice, and he thought, moreover, it was preferable to the use of

Moynihan's long tube. Those who had used this tube knew that while it was theoretically excellent, it was difficult to thread through a number of feet of distended intestine, and whenever one touched the intestine the peritoneum broke, so that the use of the appendix was particularly to be commended as a drainage route for enterostomy.

Doctor BEEDE, in closing, was glad that Doctor Eisendrath had been able to save some of these children by enterostomy, and then later excising or resecting the bowel. He had not been able to find a record of any such case in the literature he had consulted.

President's Address: Transplantation of Tissues.—Dr. L. L. MCARTHUR, of Chicago, said that given the appropriate conditions, any tissue might be transplanted, the difficulties increasing with the vascularity rather than the complexity of the structure, those structures requiring the least circulation proving to be the more successfully grafted. He instanced fat, a tissue made up of a delicate living reticulum stored with an enormously disproportionate amount of fatty globules. For its existence and maintenance it required little else than plasma and asepsis under body conditions. Hence it could be transplanted free and in almost any bulk, provided these conditions were maintained. For this reason, we might now look to see the cavities in bones filled, instead of with Mosetig Moorhof's plug or Beck's paste, by pads of living fatty tissue taken elsewhere from the patient, as was recently demonstrated at Garré's clinic in Bonn; or, as the author had several times done, deposited such fatty tissue in areas heretofore treated by Gersuny's paraffin injections, it being particularly adapted to filling out those greater deformities not amenable to paraffin. He gave as an example the cosmetic filling out of the deformity left after a partial resection of the lower jaw. This had given him most gratifying results. Encouraged by the successful transplantation of this tissue, till recently considered so liable to slough, he had stolen elsewhere from the patient an envelope of fatty fascia to protect the musculospiral nerve just released from the callus of a humeral fracture, or a nerve trunk just sutured after resection for neurofibroma. Again, the hygroma that developed after Murphy's interposition of fatty fascia need no longer be obtained from a pedunculated flap taken from the immediate neighborhood of the joint, often at the sacrifice of structure essential to a good result and adding a complication to the operation, but might be secured elsewhere. For the ankylotic hip or knee, the operation could thus be remarkably simplified.

Experimental Study of the Therapy of Shock.—Dr. M. G. SEELIG, Dr. J. TIERNEY, and Dr. F. RODENBAUGH, of St. Louis, in a joint paper, attempted to check up the work of Professor Yandell Henderson on shock. Henderson's theory of shock was that this symptom complex was due to a lack of carbon dioxide in the circulating blood. The essayists, therefore, attempted by direct methods to increase the carbon dioxide blood content. For this purpose they introduced intravenously into shocked dogs varying quantities of a molecular (8.4 per cent.) solution of sodium bicarbonate. Sodium bicarbonate was dissociated into sodium carbonate and carbon dioxide by three elements in the blood, viz., serum albumin, hemoglobin, and acid sodic phosphate. The quantity of the solution used varied from five to 200 c. c., and the condition of the dogs varied from normal to a state of profound shock.

An analysis of the results obtained on a large series of experiments on dogs showed that sodium bicarbonate was a powerful blood pressure raising salt, the rise in blood pressure persisting over a fairly long period of time. Likewise, this salt markedly increased the amplitude of the heart beat, though it had no appreciably constant effect upon the rate. The depth of respiration was always increased by the infusion, though the rate of respiration varied within wide limits.

After it had been definitely determined that the above noted effects were constant, it was attempted to determine by what mechanism the rise of pressure was occasioned. To this end, the bulk of fluid injected, the alkalinity of the sodium bicarbonate, the hypertonicity of the solution, and the free carbon dioxide resultant from the injection, were studied separately.

The authors reached the conclusion that bulk and hypertonicity played a minor rôle in raising the blood pressure; that alkalinity played a more important part, but that it seemed most probable that some additional undiscovered factor was responsible for the pronounced rise. Whatever this factor was, it seemed to act directly on the heart, even when this organ was isolated from its central nervous system relationships. The authors were not able to attribute any of the pressure effect of the infusions to the increased carbon dioxide content of the blood.

(*To be concluded.*)

Letters to the Editor.

MALARIAL ORCHITIS.

FORT PIERCE, FLORIDA, *April 9, 1913.*

To the Editor:

One of the peculiarities of malaria as found in Florida and Cuba, is orchitis, with or without remission of symptoms, such as neuralgia or tumefaction. These cases are often accompanied by some urethral discharge, such discharge showing a mixed saprophytic bacterial flora, and in most cases the patient is positive that he has the typical gonorrheal orchitis. Microscopically, I have found crescents most abundant in the blood, in these cases. All that is necessary to class the trouble etiologically, is a few massive doses of quinine. As a rule, I find three or four one drachm doses sufficient, but I have had cases that would not succumb to less than 120 grain doses. I find it a good principle to continue one thirty or forty grain dose weekly, for one or two months, to prevent recurrence.

C. G. ROEHR, M. D.

SNAKES IN IRELAND.

WAR DEPARTMENT,
OFFICE OF THE SURGEON GENERAL,
WASHINGTON, *April 10, 1913.*

To the Editor:

The casual reader of the editorial article in your issue for April 5, 1913, entitled The Dangers of Antityphoid Vaccines, especially if he did not have an opportunity to read in full the articles upon which the editorial comment is based by Professor Vincent's assistants, Doctor Louis and Doctor Combe in *Monde médical* for December 5, 1912, and Doctor Spooner in the *Journal of the American Medical Association* for October 12, 1912, might readily infer that this procedure has dangers which are considerable and not negligible. It is believed, however, that this inference is a mistaken one which is not justified by a careful reading of the articles in question and by a study of the vast experience on record in the office of the Surgeon General of the Army covering more than 100,000 immunizations.

It is true that Louis and Combe detailed with considerable fullness the conditions which they consider to contraindicate the employment of the vaccine. Spooner also recounts incidences of temporary exacerbations in cases where the immunization was employed on persons suffering from various diseases. The conclusions of these authors, however, differ in no respect from those of Russell as expressed in *Circular No. 7,* Surgeon General's Office, April 24, 1912:

"*No person should be immunized who is not perfectly healthy and free from fever at the time.* In case of doubt it is advisable to take the temperature and to examine the urine. If the man has fever or any other signs of illness, the prophylaxis should be postponed until he recovers. This precaution is necessary to avoid its administration to men who may be coming down with typhoid or other fevers.

The men should be cautioned not to drink beer or alcohol in any form on the day of treatment.

This prophylaxis is borne well by children and by women, using doses proportionate to the body weight, taking 150 pounds as the unit. Women should not be given the first dose during or near the time of the menstrual period."

These suggestions are simply the suggestions of common sense and experience and do not imply that the procedure applied with any reasonable amount of precaution is dangerous in any accepted meaning of the word. None of

the writers quoted have stated any case in which a permanent injury has been caused by this procedure and their conclusions are far from being in any way adverse to it. Louis and Combe conclude their article as follows:

"We are thus undoubtedly in possession of a method which it is not claiming too much to say, is for typhoid fever as efficacious as is the vaccination of Jenner for smallpox. The results which it has given in Morocco have surpassed all hopes and convinced the most skeptical."

"Antityphoid vaccination," recently wrote the Chief Medical Officer of the Hôpital Louis at Meknès, "is followed here in an intensive fashion. There remain in all the garrison only about 200 unvaccinated Europeans. The results are surprising. The typhoid wards, formerly so crowded, are to-day almost empty. With more than 4,000 troops there are actually only two typhoid cases under treatment. It is wonderful."

The conclusions of Spooner in the article referred to are as follows:

"Frequent injections of small amounts of a low virulence vaccine cause slight inconvenience.

They seem to produce a protection among nurses, who are eight times more liable to the disease than the average individual.

Their morbidity, under ordinary conditions, is 1.4 per cent., or nineteen cases among 1,361.

Only two cases developed under these conditions.

Case morbidity among the uninoculated in these hospitals is nearly nine times greater than among the inoculated, subjected to similar conditions.

No permanent untoward effects have arisen from over 5,000 injections.

The blood picture indicates a certain protection lasting at least two and a half years.

The use of this means of protection has been shown to be safe in two epidemics and very efficient in at least one of them."

In the great recent experience of the United States Army where typhoid immunization is compulsory, although temporary inconveniences and accidents have occurred which should properly be classed as disagreeable but not dangerous, there seems after a reasonable discrimination is exercised between *post hoc* and *propter hoc*, no grounds for belief that this procedure is any more dangerous than vaccination against smallpox. It does not appear to have increased the morbidity from any other cause. Even as regards tuberculosis it does not appear to have stimulated into activity latent processes in any appreciable number of cases. The average rate per mille of admissions for tuberculosis during the three years, 1910, 1911, and 1912, during which there have been more than 100,000 immunizations, has been 3.56 as compared with an average rate of 4.43 admissions per mille for the three years antecedent to 1910.

On the other hand there is a real danger in an attitude of unjustifiable pessimism and excessive precaution. The only officer of the United States Army who died of typhoid fever in 1912 would in all human probability have escaped being cut off in the prime of life if the typhoid immunization had not been withheld on account of the recent arrest of a pulmonary tuberculosis in his case. Is not the conservatism rather extreme which would seriously weigh the slight inconveniences of typhoid immunization against its remarkable benefits and which solemnly declares that the question of its adoption is still *sub judice*, when typhoid fever is so near extinction in the army that the Surgeon General has not received the report of a single case in the army during the current calendar year, the date of the last case reported being December 9, 1912?

J. R. Kean, Lt. Colonel, Medical Corps, U. S. Army.

THE ACTION OF CROTALIN IN EPILEPSY.

Philadelphia, *April 14, 1913.*

To the Editor:

Dr. Ralph H. Spangler's communication on crotalin in the treatment of epilepsy, published in your issue of the fifth inst., is of much interest, since it demonstrates clearly that this drug has a decided influence in checking the progress of epilepsy.

It is not to this point, however, that the writer desires to draw attention, but to the explanation which Doctor Spangler offers as to the manner in which crotalin acts. He seems to be satisfied in believing that the increased coagulation of the blood, which is present in epilepsy, is accountable for the seizures, and that crotalin, by thinning the blood, inhibits the attacks, but leaves entirely out of consideration the possibility of the exaggerated coagulability being a concomitant rather than a cause of the seizures.

The writer has probably had as large as, if not a larger experience in the hypodermic administration of crotalin than anyone else, and believes it exceedingly doubtful whether the small dose which is ordinarily given in this disease has the least influence in modifying the general coagulability of the blood directly; nor does he believe that the beneficial effect of the drug is at all proportionate to the degree of local reaction which it calls forth at the seat of injection, as Doctor Spangler seems to think. Indeed, the writer is convinced that crotalin in the early history of its administration was given in too large doses in many instances, and that its best effects are, as a rule, obtained in minimum doses, especially in beginning the treatment of any case.

Without entering into any discussion as to the manner in which crotalin acts in subduing epilepsy, it seems that if epilepsy is caused by excessive coagulation of the blood, and that, if crotalin checks the disease by inhibiting or decreasing such coagulation, it is incumbent on Doctor Spangler, in order to establish his theory, to make comparative experiments with agents like the watery extract of the medicinal or common leech and other substances, which have the undoubted power of diminishing the coagulation of the blood, and find out whether they manifest the same influence on epilepsy as is done by crotalin.

Until he does this, or in some other way shows a more logical connection between his premises and his deductions, his contention that crotalin relieves epilepsy through the blood falls by the wayside. Thomas J. Mays, M. D.

Book Reviews.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

Prisms. Their Use and Equivalents. By James Thorington, A. M., M. D., Professor of Diseases of the Eye in the Philadelphia Polyclinic and College for Graduates in Medicine, etc. With 118 Illustrations, of Which 18 Are Colored. Philadelphia: P. Blakiston's Son & Co., 1913. Pp. vii-144.

This little book describes prisms in general, the refraction of light and the optical effects produced by them, the methods of nomenclature, and the uses to which they are put, particularly in ophthalmology. It contains little that is new, except a description of the author's double truncated prism, but is a handy volume for reference, although mathematical formulæ have been, as a rule, omitted.

The Labyrinth. An aid to the Study of Inflammations of the Internal Ear. By Alfred Braun, M. D., and Isidore Friesner, M. D., New York. With Fifty Figures in the Text and Thirty-four Half Tones on Thirty-two Plates. New York: Rebman Company, 1912. Pp. 250. (Price, $4.)

The authors of the present work have had as their aim to present to the medical profession the clearly established basic truths in connection with labyrinthine disease; and, in the points which are still *sub judice*, to give the hypotheses which seem the most plausible. They have succeeded admirably in both these aims. The book is clearly printed, judicious use being made of bold faced type and of italics, and is well illustrated with diagrams and halftones. There are 234 pages of matter beside the bibliography, list of authors mentioned, and the index. The six chapters are as follows, viz.: Anatomy, physiology, methods of examination, pathology, symptoms and treatment of labyrinthitis. *En résumé*, the book accomplishes what it sets out to do, i. e., to give the most recent facts and thoughts on this very complex subject. It does this in such

a way that one can grasp the points as they are brought out. There are a few typographical errors, as there are bound to be in all new books; see, e. g., pp. 26, 108. The bibliography makes no pretense at completeness, and is largely of the German works on this subject. But it is useful. The index is fairly complete, making it easy to refer to a given subject in its different aspects. The work is similar in style and binding to the other books of the Rebman Company in this general series.

Ueber Laparo- und Thorakoskopie. Von Dr. H. C. JACOBAEUS, Privatdozent in Stockholm. Mit einem Geleitwort von Prof. Dr. L. BRAUER. Sonderdruck aus "Beiträge zur Klinik der Tuberkulose," herausgegeben von Prof. Dr. L. BRAUER, XXV, Bd., H. 2. Mit 5 Tafeln und 1 Textabbildung. Würzburg: Curt Kabitzsch, 1913. Pp. 170.

Doctor Jacobaeus, in a book of some 170 pages, gives a very interesting presentation of the application of cystoscopic methods to the examination of the peritoneal and pleural cavities. The first part is devoted to the technic and general indications for the use of the instrument; then follows reports of cases of diseases of the liver, of tuberculous peritonitis, and of cancer of the stomach and liver. The difficulty and risk in employing this procedure seem no greater than in tapping for ascites. The site for the puncture depends obviously upon the situation of the area to be viewed. In examining the thorax the same technic is employed, but the statement is made that not only the skin should be anesthetized at the point of puncture, but the pleura as well. The following were the diseases in which this was done: Tuberculous pleurisy, idiopathic and nontuberculous pleurisy, chronic exudative pleurisy, empyema, and a case of experimental pneumothorax. The method seems to be of very distinct value, particularly as it does not entail the same risk as an exploratory operation. This publication is well worthy of serious consideration.

Synthèse du bacille de Koch. Par ALBERT et ALEXANDRE MARY. Paris: Jules Rousset, 1913.

In a brief brochure of twelve pages the authors undertake to prove that the Koch bacillus is not the pathogenic agent in tuberculosis. They hold that this bacillus is nothing more than a precipitation product; that it occurs instantaneously on the addition of drops of tuberculin to glycerophosphate of sodium, the medium habitually employed. These bodies, thus artificially obtained, possess the same acid resistance and difficulty in staining that the so called bacillus itself has. One cannot feel that there has been given any good reason for altering the views so commonly held concerning this phenomenon.

Die Behandlung der Knochen- und Gelenktuberkulose mit orthopädischen Massnahmen. Von Dr. F. OEHLECKER, chirurgischen Sekundärarzte. Band I. Würzburg: Curt Kabitzsch, 1913. Pp. 90.

This brochure of ninety pages gives emphasis to the methods of treatment advocated by the author in tuberculosis of the various joints. His bibliographical references are confined entirely to his own countrymen and ignore the very extensive researches in the same field by English, Russian, and American writers. The application of plaster of Paris is well described, with numerous illustrations and withal the booklet embodies a thoughtful presentation of the subject, giving the reader much information.

Die exudativ-lymphatische Diathese. (Eine kurze Skizze für den praktischen Arzt.) Von Privatdozent Dr. PAUL SITTLER, Colmar i. Els., früherem Dozenten für Kinderheilkunde an der Universität Marburg a.L. Würzburg: Curt Kabitzsch, 1913. Pp. vi-111.

Under this title Doctor Sittler gives a very interesting presentation of the symptom complex known as status lymphaticus. After the introduction there follows a general review of the condition, then some twenty pages devoted to the therapy of the disease. The various manifestations of this malady as they appear in the different systems of the body are quite fully discussed, and the relationship to infectious diseases, particularly tuberculosis, is brought out. In considering the underlying causes, Czerny's statements are given, i. e., that it is due to a congenital defect in the chemistry of the body as a result of which all tissues of the body may show great variations in the amount of the watery constituents. It may be due to an overloading of the body by acids. As a result of his investigations Sittler believes that this symptom complex is due, less to an insufficiency of a single gland, such as the thyroid, than to a complicated disturbance of the correlating mechanism of the different glands having internal secretions. Attention is also called to the resemblance of this condition to anaphylaxis. Although this may not be a common disease, nevertheless, it probably occurs much more often than is appreciated, and this volume is very timely in calling attention to a subject concerning which so little is known.

Lehrbuch der Chirurgie. Bearbeitet von Prof. KLAPP, Prof. KÜTTNER, Prof. LANGE, Prof. LANZ, Prof. PAYR, et al. Herausgegeben von Prof. WULLSTEIN und Prof. WILMS. Dritte umgearbeitete Auflage. Erster Band. Mit 375 zum teil mehrfarbigen Abbildungen. Pp. xii-660. Zweiter Band. Mit 211 zum teil mehrfarbigen Abbildungen. Pp. vi-496. Dritte Band. Mit 5 Tafeln und 493 zum teil mehrfarbigen Abbildungen. Pp. ix-622. Jena: Gustav Fischer, 1912.

This work has reached its third edition in four years. A glance at the names of the collaborators assures the reader that all subjects have been written by men of wide experience in teaching and practice, who all hold positions as professors of surgery and directors of surgical hospitals. The work consists thus of a collection of authoritative articles by men who are active teachers and practitioners of surgery. Furthermore, some of the articles are written by men specially interested in the particular subjects assigned to them, who have made careful study and investigation in these fields. There are two changes in the arrangement of the subject matter, which are striking and which may or may not commend themselves to the reader. In the first place, the surgery of the extremities is not treated in topographical sequence, but is arranged according to tissues. Thus soft parts, bones, and joints are taken up separately, and the injuries, diseases, and deformities of each are discussed in order. There is no doubt that in this way many repetitions are avoided. The second change is that most of the subjects usually under the head of general surgery will be found described in conjunction with the special topics. Only four subjects, anesthesia, healing of wounds and inflammation, suture and hemostasis, and the treatment of wounds, make up the introductory part of the work. This arrangement is also used for the purpose of avoiding repetitions. It is very probable that serious objections will be raised to these innovations. The work has already been translated into the Hungarian and Russian languages and will in all probability appear soon in an English form.

The Bradshaw Lecture on the Biology of Tumors. Delivered at the Royal College of Surgeons of England, on Thursday, December 5, 1912. By C. MANSELL MOULLIN, M. A., M. D., F. R. C. S., Consulting Surgeon to the London Hospital, etc. London: H. K. Lewis, 1913. Pp. 39.

Although one lecture is very little in which to discuss the subject of tumors, yet this small monograph forms an interesting presentation of the topic. Stating that no proof has ever been brought forward that the structures commonly spoken of as tumors, simple or malignant, are caused by parasites, Doctor Moullin traces the changes occurring in the somatic cells. He holds that the progressive development of the organs and tissues of the individual is the outcome of the mutual relations that have been built up between the infinite variety of cells of which the body is composed. Consequently if differentiation is checked, especially in its earlier stages, the property of growth is capable of reasserting itself with all its old energy, or even with increased energy. The result of this is a tumor. Although by no means exhaustive, this résumé of the question is excellent.

BOOK AND MAGAZINE NOTES

A book entitled *Slight Ailments* was a useful companion of the graduating medical student and the doctor some thirty years ago; it disappeared, we believe, owing to the distinguished author's inability to reconcile himself

to the teachings of modern pathology; for him the bacteria were consequences of disease, not causes. For the past fifteen years or so *Minor Maladies*, by Leonard Williams, M. D., M. R. C. P. (New York: William Wood & Co.), has occupied the useful place of its predecessor. The third edition of 306 pages has just made its appearance and will be found packed with information, either passed over lightly in heavier treatises or difficult to find in an emergency. The book discusses in an interesting and practical way indigestion, constipation, diarrhea, headache, goutiness, change of air, the general health, and similar topics, while a chapter is devoted to insanity—hardly a minor malady—and a particularly valuable section of fifty pages is given to a study of some drugs and their uses. The reader may be surprised to note the author's faith in sarsaparilla. There is a thorough discussion of thyroid extract and some useful warnings are given concerning digitalis. A little editing would help the next edition; there is no good reason for giving the dose of one cough mixture as one drachm, and of the next as one teaspoonful (p. 51). We think our friends will like this book very much. In an American edition it would have been well to substitute our usual legal procedure with an insane patient for that followed in England.

We commented editorially some time ago on the discovery that the supposed fragment of intestine preserved in the College of Physicians and Surgeon in London and supposed to have come from the body of Napoleon was not authentic; since that discovery grave doubts have been cast upon the story that the great commander died of malignant disease. Arnold Chaplin, M. D., however, in *The Illness and Death of Napoleon Bonaparte* (London: Hirschfeld Brothers, Ltd., 1913; pp. 112, price 70 cents), considers that the facts which he cites in his carefully written thesis, "allow an opinion to be formed with tolerable certainty that the cancer which killed Napoleon was secondary to a chronic ulcer, from which he must have suffered for some considerable time, and in the edges of which it orignated." Doctor Chaplin believes that Napoleon suffered from gastric ulcer for three years and that the cancer developed only some eight months before his death. The fact that a correct diagnosis was not made during life, he attributes to the division of the attending physicians into two political camps, one of which wished to prove that Napoleon was being slowly done to death, while the British practitioners were concerned to show that "captivity in St. Helena was as healthy and almost as blissful as residence in the Garden of Eden." They were all men of limited professional attainments and, in some cases, of mediocre intelligence. It is interesting to note that the author of this interesting monograph does not believe that the relic in the English museum is genuine.

Miscellany.

AN OPEN LETTER TO GOVERNOR SULZER.

NEW YORK, *April 12, 1913.*

To Hon. William Sulzer, Governor, The Senate, The Members of the Assembly of the State of New York:

The Medical Society of the Borough of the Bronx by unanimous vote at its regular meeting on this ninth day of April, 1913, resolved to, and does hereby protest against Senate Bill No. 869 (Int. 793), entitled, "An act to amend the public health law, relative to medical licenses."

The statute now in effect provides that on the unanimous recommendation of a committee of three of the Board of Medical Examiners, the Regents of the University of the State of New York shall have power to revoke said license or said registration to practise; and the causes for this action we find in the present statute to be: Guilty of fraud and deceit in practice, guilty of crime or misdemeanor or guilty of fraud or deceit by which he was entitled to practise; undertaking or engaging in the procuring or performing of criminal abortion; offering or undertaking to violate any of the provisions of section 1142 of the penal law; habitual drunkenness or habitual addiction to the use of morphine, opium, cocaine, or other drugs having similar effect. While in the foregoing are some causes for action in which the procedure does not involve trial by jury, we nevertheless have no criticism to make of such present statute.

The proposed statute, however, gives beside the above named, the following causes for action which do not involve a trial by jury of laymen: Advertising in any newspaper, pamphlet, etc., by writing letters or causing them to be written, etc., as to the cure of disease or defects of the sexual organs; announcing professional services without compensation or acceptance of fees in consideration of the assurance that an incurable disease may be permanently cured; wilfully betraying a professional secret; employment of capper, solicitor, or drummer for securing patients; division of fees or promise of division of fees, etc., in securing patients; any action not consonant with good morals or anything said or done detrimental to the health or morals of others; any other act, which, in the judgment of the Board of Regents is inimical to the good name and character of the medical profession or which, in the judgment of said board tends to impair public confidence in a member of that profession.

We protest against putting in the statute books of the State such kind of legislation; our profession is one of hard work, giving enormous services to charity and is educated at higher expense of time and money than is any other vocation or avocation; it stands before the public in a peculiarly sacred and intimate position and to rest such causes of action in the taking away of a man's livelihood on a pedagogic administrative body is to morally belittle a medical man, contract his usefulness, and limit his courage. There is no special or general demand so far as we know by the profession in this State for such legislation; to even get a definition from a commission of medical men as to what constitutes advertising would be a difficult piece of work.

Further, the power proposed in said bill to suspend a license also does not appear necessary, as the present law allows for the reinstatement of revoked licenses by the Board of Regents.

Further, a practitioner judged insane by a court automatically loses the power to practise; it appears to us unnecessary that such should be specially defined in this act.

Lastly, the sections in the proposed statute annulling the power of full pardon with restoration to practise by the Governor or President of the United States seems to us unconstitutional.

To take away the property, the liberty, or the life of a man is a process of law completed only by a jury of laymen, said right going back to the Magna Charta. To revoke the license of a practitioner of medicine is to take away his means of livelihood.

ISAAC M. HELLER, M. D., President.
JOHN J. DECKER, M. D., Secretary.

A Turtle Serum Used Five Hundred Years Ago.—The recent exploitation by Doctor Friedmann of a serum derived from turtles as a cure for tuberculosis has caused research into historical medical literature, especially in France. The following forgotten bit of history is contributed by a writer, M. Gaulois, and is condensed from a Parisian journal:

On July 8, 1483, King Louis XI of France sent George the Greek, master mariner, to the Cape Verde Islands to seek "various things touching nearly to the well being and health of our person."

The Cape Verde Islanders had the reputation of possessing a cure of leprosy, a report of which had been brought back to France by a traveler from the coast of Guinea at about the time King Louis was in declining health.

According to the recital of this traveler, the big sea turtles were caught by the islanders when they came out on the beach at low tide to feed. They were at once killed, and their blood caught in large tubs. Persons afflicted with leprosy bathed in the blood, and afterward ate of the turtle's flesh. This treatment was kept up for two years, at the end of which time the patients were usually completely cured of the dreadful disease.

This record would tend to show that Louis XI was a leper. That such was the case had been rumored by chroniclers, but the reason of the expedition to the Cape Verde Islands, now published for the first time, throws much light on the psychology of Louis XI, his ill humor, and his sedulous avoidance of mankind during the last days of his life. The wretched man evidently believed

himself to be smitten with leprosy. He was, however, never fated to test the efficacy of the sea turtle remedy, for he died August 30, 1483, before the return of the expedition.

Meetings of Local Medical Societies.

MONDAY, *April 21st.*—New York Academy of Medicine (Section in Ophthalmology); Medical Association of the Greater City of New York; Medical Society of the County of Erie, N. Y.; Elmira Clinical Society; Hartford, Conn., Medical Society.

TUESDAY, *April 22d.*—New York Dermatological Society; Metropolitan Medical Society of New York City; New York Medical Union; New York Psychoanalytic Society; Alumni Association of Seney Hospital, Brooklyn; Riverside Practitioners' Society, New York; Valentine Mott Medical Society, New York; Washington Heights Medical Society; Woman's Hospital Society, New York; Rome, N. Y., Medical Society.

WEDNESDAY, *April 23d.*—New York Academy of Medicine (Section in Laryngology and Rhinology); New York Surgical Society; New York Society of Internal Medicine; Medical Union, Buffalo.

THURSDAY, *April 24th.*—New York Academy of Medicine (Section in Obstetrics and Gynecology); Hospital Graduates' Club, New York; New York Celtic Medical Society; New York Physicians' Association; Bronx Medical Association.

FRIDAY, *April 25th.*—New York Academy of Medicine (Section in Public Health); New York Society of German Physicians; New York Clinical Society; Manhattan Medical Society; Academy of Pathological Science, New York; Italian Medical Society, New York; Hospital Graduates' Club, Brooklyn; Audubon Medical Society, New York.

SATURDAY, *April 26th.*—West End Medical Society; New York Medical and Surgical Society; Howard Medical Society; Lenox Medial and Surgical Society.

Official News.

United States Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending April 12, 1913:

Appel, Daniel M., Colonel Medical Corps. Relieved from duty as chief surgeon, Central Department, and at the proper time will proceed to San Francisco, Cal., and take transport for Honolulu about May 5th, and on arrival will report to the commanding general, Hawaiian Department, for assignment to duty as chief surgeon, Hawaiian Department. **Chase**, Alpha M., First Lieutenant, Medical Corps. Honorably discharged from the service of the United States after the expiration of all leave due him, his services being no longer required. **Crosby**, William D., Colonel, Medical Corps. Relieved from duty at the Soldiers' Home, District of Columbia, and will proceed to Fort Sam Houston, Texas, and report in person to the commanding general, Southern Department, for assignment to duty as chief surgeon of that department. **Doerr**, Charles E., Captain, Medical Corps. Granted leave of absence for one month and two days, at such time as can be granted by post commander. **Edger**, B. J., Major, Medical Corps. Left Fort William Henry Harrison on April 3d, for Fort George Wright for duty. **Garcia**, L. C., Captain, Medical Corps. Arrived at Fort Morgan, Ala., on April 6th, for duty. **Kennedy**, J. S., Lieutenant, Medical Reserve Corps. Ordered to Fort McPherson, Ga., on April 8th, for temporary duty from Fort Barrancas, Fla. **McCaw**, W. D., Lieutenant Colonel, Medical Corps. Detailed as a member of the preliminary examining board of the Medical Corps, vice Colonel Louis A. La Garde, relieved. **Maus**, L. M., Colonel, Medical Corps. Granted leave of absence for ten days about April 9th. **Stephenson**, William, Colonel, Medical Corps. Relieved from duty as sanitary inspector and assistant to the chief surgeon of the first division, and will proceed to Chicago, Ill., and report to the commanding general, Central Department, for assignment to duty as chief surgeon, Central Department. **Thode**, E. T., First Lieutenant, Medical Reserve Corps. Will proceed from Fort Hamilton to Fort Jay for temporary duty from April 9th to 19th inclusive. **Wright**, F. S., Captain, Medical Corps. Granted three months and twenty days' leave of absence, about June 1st, with permission to go beyond the seas.

United States Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending April 12, 1913:

Abeken, F. G., Passed Assistant Surgeon. Detached from the Navy Recruiting Station, St. Louis, Mo., and ordered to the Naval Station, Guam, via Army transport from San Francisco on May 5th. **Higgins**, M. E., Passed Assistant Surgeon. Detached from the Naval Medical School, Washington, D. C., and ordered to the U. S. S. *Illinois*. **O'Malley**, J. J., Assistant Surgeon. Detached from the U. S. S. *Elcano* and ordered to the U. S. S. *Saratoga*. **Osterhaus**, Karl, Acting Assistant Surgeon. Appointed an acting assistant surgeon in the United States Navy from March 25, 1913. **Tompkins**, J. A., Assistant Surgeon, Naval Medical Reserve Corps. Detached from the Naval Hospital, New York, N. Y., and ordered to the Naval Recruiting Station, New York, N. Y. **Wickes**, G. L., Passed Assistant Surgeon. From waiting ordered to Navy Yard, New York, N. Y.

Births, Marriages, and Deaths.

Married.

Hilbert—Ashman.—In Nanticoke, Pa., on Wednesday, April 2d, Dr. John A. Hilbert and Miss Annie Ashman. **Posey—Sherk.**—In Lititz, Pa., on Thursday, March 27th, Dr. Silas Robert Poset and Miss Edna Mae Sherk. **Reed—Wilson.**—In Central Islip, N. Y., on Monday, March 31st, Dr. Ralph G. Reed and Miss Lelia B. Wilson. **Ryon—Hurlock.**—In Wilmington, Del., on Wednesday, April 2d, Dr. Elijah William Ryon and Miss Helen M. Hurlock. **Simrell—Morris.**—In Clark's Summit, Pa., on Wednesday, April 2d, Dr. Herbert Eugene Simrell and Miss Trystine Morris.

Died.

Baldwin.—In New York, on Friday, April 11th, Dr. Jared Grover Baldwin, aged eighty-five years. **Bennett.**—In Bridgeport, Conn., on Saturday, March 22d, Dr. Harry Raymond Bennett. **Blair.**—In Lynn, Ind., on Sunday, March 30th, Dr. James S. Blair. **Born.**—In Cincinnati, Ohio, on Thursday, April 3d, Dr. Charles Born, aged seventy-three years. **Cheeseman.**—In Watertown, N. Y., on Thursday, April 3d, Dr. Byron C. Cheeseman, aged fifty-six years. **Cheesman.**—In Swedesboro, N. J., on Monday, April 7th, Dr. John Passmore Cheesman, aged sixty-one years. **Fearn.**—In Oakland, Cal., on Sunday, March 30th, Dr. Radford Fearn, aged sixty-eight years. **Johnson.**—In Kansas City, Mo., on Thursday, April 3d, Dr. George W. Johnson, aged seventy-nine years. **Juler.**—In Cincinnati, Ohio, on Thursday, April 3d, Dr. Henry Cundell Juler, aged eighty-six years. **Lung.**—In Spokane, Wash., on Monday, March 31st, Dr. John A. Lung, aged eighty-nine years. **MacLeod.**—In Buffalo, N. Y., on Thursday, April 3d, Dr. Norman Keatchie MacLeod, aged thirty-four years. **Paynter.**—In Lawrenceburg, Ky., on Wednesday, April 2d, Dr. C. M. Paynter, aged fifty-eight years. **Staples.**—In Dubuque, Iowa, on Wednesday, April 2d, Dr. George Allen Staples, aged fifty-four years. **Sternlicht.**—In New York, on Tuesday, April 8th, Dr. Isaac Sternlicht, aged fifty years. **Stutzman.**—In Tower City, Pa., on Monday, April 7th, Dr. Harry A. Stutzman, aged thirty-six years. **Thomson.**—In Hastings, Ont., on Monday, April 7th, Dr. James Thomson, of Winchester, aged twenty-five years. **Winch.**—In Monepelier, Vt., on Friday, March 28th, Dr. John H. Winch, of Northfield, aged fifty-eight years.

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Original Communications.

INOPERABLE PRIMARY CARCINOMA OF THE BREAST.*

Some Good Results in Treatment by Means of the Röntgen Rays.

BY GEORGE E. PFAHLER, M. D.,
Philadelphia.

In the treatment of inoperable primary carcinoma of the breast, the Röntgen rays do not enter into competition with any other method, since there is no other that has accomplished sufficiently good results in this class of patients to deserve comparison. Any cure, any increased comfort, or any improvement is just so much gain in a class of patients that is otherwise hopeless.

Patients suffering from carcinoma of the breast may be considered inoperable, either because of the extent of the disease, such as extensive metastasis, or because of some unfavorable physical condition, such as cardiac disease, advanced arteriosclerosis, advanced nephritis, diabetes mellitus, etc., or a patient may offer absolute refusal of operation.

In this class of patients we shall still be able to hold out some reasonable hope. How much hope will depend upon the extent of the disease, the rate of growth, and the general condition of the patient; and as much upon the skill with which the rays are applied.

This report is based upon a study of twelve cases, which is all of this type that I have treated in the past fourteen years in which I have been doing röntgenotherapy. I have treated hundreds of cases of recurrence following operation, upon which I shall make a later report.

CASE I. Mrs. B., aged seventy-three years, was referred to me for treatment by Dr. Edwin T. Robinson, November 8, 1902. She had injured her left breast three years previously, and noticed the tumor one and a half year before coming to me, at which time it was four inches in diameter and had bled frequently, on two occasions profusely. The discharge was offensive. There was no palpable glandular involvement. It was inoperable because of cardiac disease, and because of her age. The bleeding, the discharge, and the tumor decreased progressively. Treatment was irregular on account of an attack of bronchopneumonia and repeated attacks of rheumatism. On inquiry Doctor Robinson has very kindly sent the following note: "Mrs. B. died in April, 1906, nearly four years after beginning treatment. The tumor mass had entirely disappeared, which you will remember was originally about the size of half a small cantaloupe. In place of it there was a small ulcer, with retracted tissue about it and considerable induration of the surrounding parts. There was never at any time evidence of metastatic growths, or axillary or clavicular involvement. Pain was never present even after she was confined to her room. She died of exhaustion, aged seventy-seven."

CASE II. Mrs. E., aged eighty-three years, referred by Doctor Ulrich, April 20, 1903. Tumor had been noticed by the patient a year previously, and at the beginning of treatment was about half the size of a fist. No axillary nor supraclavicular glands were palpable. Inoperable because she was feeble, had marked arteriosclerosis and cardiac disease. Her age (eighty-three) also made operation inadvisable. She was seldom able to leave her room, and was treated there. Under treatment the tumor gradually became softer, more movable, and smaller, until at the end of six months there was nothing left but a small mass of what appeared to be shrunken scar tissue. During this time she had been given fifty-four applications of the rays. This then remained stationary without further treatment. The family moved to the western part of the State, and about two years later I learned that carcinoma of the cervix uteri had developed, from which she died about a year later. Recurrence in the breast did not develop. This patient was eighty-six years of age when she died; she had been free from recurrence about three years. This result was obtained about ten years ago.

This patient, who was treated ten years ago, never got well, but the discharge, bleeding, and tumor disappeared. She was free from pain, and lived four years.

CASE III. Mrs. B., aged seventy years, was referred by Doctor Frank, November 23, 1904. A tumor had been growing in her breast for two years, and was then three inches in diameter, with marked retraction of the nipple. It was typically a scirrhous carcinoma. Inoperable because of her absolute refusal, and because of her age and marked atheroma of her arteries. Under x ray treatment, this tumor was reduced in six months, and eighty-five applications of the rays to a small fibrous mass about an inch in diameter, about one half inch in thickness, and freely movable. It had a puckered appearance, was never painful, and gave no annoyance during eight years that I had the opportunity of following the case. She died of senile changes in the summer of 1912.

This patient had a typical scirrhous carcinoma of the breast; was inoperable; was made comfortable and free from any symptoms of the disease for eight years during which I observed her. She went about her usual affairs and had the general good health of a woman from seventy to eighty years of age.

CASE IV. Mrs. E., aged forty-nine years, was referred to me by the Rev. Dr. Russell H. Conwell, July 27, 1908. She had been operated upon for carcinoma of the left breast five years before, at one of our leading hospitals. At that time the tumor was said to be the size of a walnut, and was excised. Recurrence developed within two years. When she came to me the tumor tissue involved the entire mammary region, with axillary and supraclavicular involvement. The mass was so large that it left the impression on my mind of an extensive primary growth. It was a hard, painful, adherent, nodular mass, ulcerated at several places (Fig. 1). It was so far advanced that I wrote to Doctor Conwell that I believed

*Read before the Philadelphia County Medical Society, February 12, 1913, with demonstration of patients.

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nothing would be accomplished. In the absence of any other hope, I treated her with the rays.

In a month the mass of tumor tissue was reduced to half, and the ulcers were healing. In two months it was reduced to a third, the ulcers were healed, and in three months no tumor could be palpated. There remained, however, a puckered central scarlike mass of tissue, about one half inch in diameter, which was freely movable, and which was not painful. I believed there was no malignant tissue present, but I feared that later this mass would undergo degeneration and accordingly referred her to Dr. Wayne Babcock for operation January 18, 1909.

I believed that only a local excision was necessary, but Doctor Babcock did a complete operation. Pathological examination of the specimen by Doctor Duncan showed some evidence of malignant disease. She was sent back to me in six weeks, when both Doctor Babcock and I felt a hard nodule in the supraclavicular region about the size of a pea. This reduced under treatment to one eighth of an inch, and has remained stationary. About a year ago, a hard nodule one half inch in diameter was discovered in the *right* axilla. This has decreased in size, but has never disappeared. At first she was treated daily, then less often, and during the past three years she has been seen once a month for the purpose of keeping her under observation. In the four and a half years she has had seventy-six applications of the rays. The left mammary area shows marked telangiectases (Fig. 2).

This woman was clearly inoperable when referred to me for treatment because of the extent of the disease, and seemed hopeless even in my estimation. The disease had practically disappeared in three months. The puckered scar was then removed. Her general health improved immediately, and during three and one half years she has felt and looked perfectly well. This case does not strictly belong to this group, but my impression was that she had a primary case, until I had asked her to report for demonstration, and then referred to my original notes. The fact that the disease was recurrent and metastatic, makes the result all the more convincing.

Case V. Mrs. T., aged thirty-eight years, referred by Dr. Samuel Johnston and Dr. Ernest Laplace, January 8, 1909. Tumors had been noticed in her breasts eight years previously. They gradually increased in size and secondary nodules developed under the anterior axillary fold.

At the beginning of treatment there was a mass, one and a half inch in diameter, in the lower outer quadrant of the left breast, and one two and a half inches in diameter in the upper and outer quadrant, with a small nodule under the anterior axillary fold. Both were hard, nodular, and adherent. There was a similar tumor in the right breast, one and a half inch in diameter, in the lower inner quadrant. She was considered inoperable because of the extent of the disease. She was treated three times a week at first. During the past three years she had been seen once or twice a month, partially for treatment and partially for observation. In all she had been treated 114 times. The tumors were reduced to a fibrous mass about one half inch in diameter, freely movable, and not tender. Her general health had at no time been interfered with, and in general appearance she looked perfectly well.

The treatment was carried to the point of producing an erythema, several times, and as a result the skin was atrophic and showed a number of telangiectases.

This patient was living and symptomatically well, over four years after she was referred with carcinoma of both breasts with metastasis. She had suffered no inconvenience except that of coming for treatment.

Case VI. Mrs. H., aged sixty years, referred by Dr. John McGuigan, March 22, 1911. A tumor had been developing for a year and a half, and when I saw her it involved the entire breast, with hard nodules in the axilla, and smaller nodules, the size of a pea, in the supraclavicular region. In addition she had an aneurysm of the arch of the aorta, and irregular heart action. She was inoperable because of the aneurysm, and the condition of her heart, but also because of the extent of the disease.

Under treatment the disease apparently disappeared, and the whole mammary area became soft and movable in about nine months, and after fifty-four applications of the rays. At this time she had an attack of cardiac failure and was laid up in bed for about two months. Since then she had been treated occasionally. Four months ago some metastatic nodules appeared below the mammary region in an area that had not been treated. These received irregular treatments and decreased.

This patient was absolutely inoperable. The disease was arrested for about a year, and even showed signs of disappearing. However, results in this case and in Case V were less satisfactory than in any of the others.

Case VII. Mrs. G., aged thirty-seven years, was referred to me by Dr. John Deaver, July 14, 1911. A carcinoma had been growing in the right breast over three years. In September, 1910, she was taken to Doctor Deaver by Dr. George Miller for operation, but at that time the disease had advanced so far that Doctor Deaver considered operation inadvisable. Ten months later, when the carcinoma had become an ulcerating mass, she was taken to Doctor Deaver again, at which time he referred her to me. She then had an ulcerating tumor about four inches in diameter, adherent to skin and ribs, with several small metastatic nodules about the tumor (Fig. 3). There were enlarged glands in the axilla and the supraclavicular region. She suffered from severe pains.

Under treatment the ulcer gradually healed, the tumor tissue disappeared, and even the scar tissue became movable upon the chest wall (Fig. 4). There was no definite evidence of disease in this area for about a year. (In these patients, it is difficult to decide just when the disease has all disappeared.)

About May 1, 1912, a tumor developed in the upper and outer quadrant of the *left* breast. She was sent to Doctor Deaver, May 18, 1912, to have him see the result in the *right* breast, and to confirm the diagnosis of carcinoma in the *left* breast. The tumor in the *left* breast had nearly disappeared and in its place was some increased firmness, which, I believed, was due to fibrous tissue. She had 206 applications of the rays in all, counting both sides.

During all this treatment she improved in general health; pains were relieved; and she increased in weight and strength. There were, of course, some atrophy and telangiectases of the skin on the right side. After two or three years, this is likely to degenerate and become necrotic. If so, and there is no carcinoma present, excision and skin grafting should be done.

This patient was clearly inoperable because of the extent of the disease. The disappearance of this advanced disease in the right breast under the action of the rays gave encouragement when signs of carcinoma developed in the opposite breast nearly a year later. The relief of the symptoms in the second breast shows that good results may at times be obtained even in a patient with a pronounced constitutional tendency.

Case IX. Miss H., aged forty-five years, referred by Dr. William Martin, October 5, 1911. She had noticed a tumor in her right breast several months, which she thought followed a bruise (walking into a rail). A sister had died from a carcinoma of the uterus about a year previously. Examination showed a tumor in the right breast about half the size of a hen's egg, a small palpable gland in the axilla, and a barely palpable gland in the right supraclavicular region. In the upper and outer quadrant of the *left* breast a tumor about the size of a pigeon's egg was palpable. She had signs of osteoarthritis in the cervical and upper dorsal spine. She had a polypus on the cervix of the uterus.

There was some doubt in the diagnosis, therefore I referred her to Dr. M. P. Warmuth, who amputated the *right* breast, cleared the axilla, and removed the small

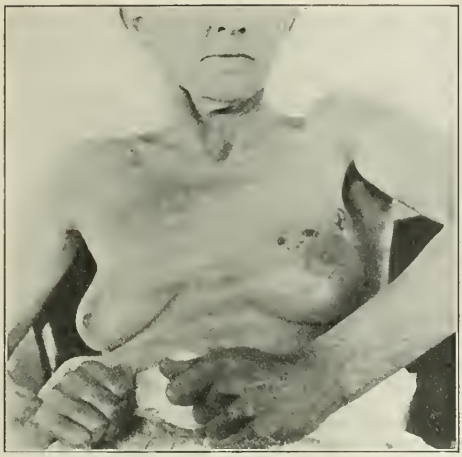


Fig. 1.—Case of Mrs. E., showing hard, adherent, nodular, ulcerated mass before treatment.

gland from the right supraclavicular region and a polypus from the uterus. Microscopical examination by Dr. Henry S. Wieder showed distinct scirrhous carcinoma.

Within two weeks after the operation, she had the excruciating pains of carcinoma, and within a month the entire operative area was indurated and showed distinct recurrence in the wound, the axilla, and the supraclavicular region, recognized by Doctor Warmuth and myself. At the same time the tumor in the *left* breast increased in size to that of a fist; and with enlarged glands in the axilla.

Very active daily treatment was given to the recurrence on the right side, until a slight dermatitis appeared, then treatment was given to the *left* breast—*which was clearly inoperable,* under these conditions—and each side was treated in turn until all evidence of the recurrence had disappeared from the right side, and until the *left,* inoperative breast had become soft and all parts freely movable. On the two sides she had had in all 186 applications of the rays.

At the end of nine months no distinct evidence of the disease could be recognized. She had returned to her usual affairs of life, was taking gymnastic exercises, and had been quite well since.

During the early part of January, 1913, she bruised the left breast; the skin which had been damaged by the rays became eroded and painful. I then referred her to Doctor Warmuth for excision of the breast. The axilla was not opened, because we believed the rays had sealed this glandulary area.

Pathological study by Dr. Eugene Case, confirmed by Dr. Joseph McFarland, showed no evidence of malignant disease anywhere, but showed pigmentation and necrosis of the skin and chronic diffuse fibrosis of the breast.

The results in this patient seem to be most striking and indisputable. The carcinoma of the right breast, with metastasis, was thoroughly removed, and upon microscopical examination proved to be an undoubted case of malignant disease. The disease recurred at once, and no one doubted the recurrence. All this recurrence disappeared under the action of the rays. The disease in the left breast increased rapidly after amputation of the right. No one doubted its malignant character. Under the action of the rays, the clinical signs of the disease disappeared, and subsequent amputation of the breast showed neither microscopic nor macroscopic carcinoma.

Case X. Mrs. E., aged seventy-eight years, referred by Dr. John J. Lynch, May 27, 1912. She had noticed a tumor in the right breast for about two months. It was then three inches long, two inches wide, and one inch thick, and occupied the upper inner quadrant. There was a smaller mass outside of the nipple, one under the anterior axillary fold, and one in the axilla. She was considered inoperable because of the extent of the disease, her advanced age, her feeble condition, markedly atheromatous vessels—and a cardiac lesion.

Under x ray treatment all signs of the disease disappeared, excepting a small, freely movable nodule about the size of the end of a finger, which occupied the site of the largest tumor. This was accomplished in eight months, with thirty-seven applications, which had to be given irregularly because of the difficulty in getting the patient to my office. At no time was there any evidence of dermatitis, and the skin was not damaged. The result in this patient was especially good because the metastatic nodules, as well as the primary growth, disappeared without any damage to her skin.

Case XI. Mrs. K., aged fifty-four years, referred by Dr. C. H. Maxwell, of Morgantown, W. Va., August 26, 1912. She noticed a tumor growing in her left breast over a year, which had become painful during the last three months. She had been sent to two surgeons in Pittsburgh, who advised operation, but could give no encouragement as to the outcome.

Examination showed a scirrhous carcinoma involving the entire breast, which was adherent, and showed marked retraction of the nipple. Three nodules could be felt in the axilla, and at least one in the left supraclavicular region. She was inoperable because of the adherent carcinoma, and the metastasis in the axilla and supraclavicular region.

Under the x ray treatment the supraclavicular and axillary nodules disappeared. The mass in the breast shriveled to about one half its former size, and was more movable. She had sixty-two applications in five months, and continued treatment.

Case XII. Mrs. W., aged seventy-three years, was referred for treatment, September 16, 1912. She noticed a tumor in the left breast about a year ago, which was three inches in diameter; with enlarged glands in the axilla. She refused operation because a sister had died two years after an operation for carcinoma of the breast. She had a loud aortic systolic murmur.

Under x ray treatment the axillary nodules disappeared, and the tumor in the breast was reduced to one third of its original size, and became freely movable. She had thirty-eight applications of the rays in five months.

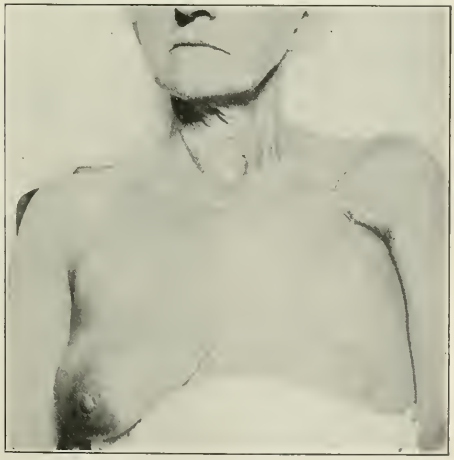


Fig. 2.—Case of Mrs. E., after three months' treatment with x rays.

Fig. 3.—Case of Mrs. G., showing ulcerating tumor, four inches in diameter, adherent to skin and ribs, with metastatic nodules; enlarged glands in axilla.

These last two patients are under active treatment, the metastases have disappeared, and the primary tumors have been greatly reduced. After they reach a stationary stage, if they do not entirely disappear, I will ask to have them excised locally, and hope to make a later report of complete success.

TECHNIC.

The details of technic in connection with the individual cases have been omitted, because it would have required unnecessary and wearisome repetition.

Dose. Each application in the early cases corresponds to about 2 x, and in the later ones to about 4 x (4/10 of an erythema dose). This dose should be accurately measured, either by the Kienböck quantimeter, the Holzknecht radiometer, or the Sabouraud and Noire disks.

The *tube* should produce penetrating rays corresponding to 6 or 7 Benoist, and should be kept uniform. If tubes are allowed to get soft, the skin will absorb nearly all of the rays and a burn will result. I like the water cooled tube best.

Any *instrument* can be used if properly managed. Large machines will reduce the time of the exposure, but will also heat and reduce the vacuum of the tube rapidly. Therefore large machines are capable of doing great good or great harm according to the management. I prefer a forty plate, high speed static machine.

The *time* of each exposure will depend upon the apparatus used and the amount of current flowing through the tube. This will usually be from five to twenty-five minutes, but should never be long enough to exceed an erythema dose, on any one area of skin.

The *repetition* of the application will depend upon individual circumstances. In general, I believe the more quickly all parts of the diseased area can receive a full dose of the rays, the more satisfactory will be the result. By careful use of a large apparatus, with which the time of exposure is short, two or more applications can be made on the same day. If the apparatus is small, and therefore the exposure long, it will be too fatiguing to give more than one application on one day. I commonly begin with daily treatments, so as to arrest the disease as quickly as possible. When all parts of the skin have received a full dose, the treatment should be interrupted for two or three weeks.

The *distance* of the anode from the skin is usually twelve inches, but this may be varied according to circumstances.

Protection of the skin is most important. A dermatitis should be avoided as far as possible. The parts of the body that are free from the disease should be protected by lead, but especially the face and hair. *Filters* such as the leather filter which I first recommended over seven years ago (*Transactions of the American Röntgen Ray Society,* September 28, 30, 1905) and which consists of a layer of sole leather interposed between the tube and the patient, will give considerable protection. To this may be added, if necessary, one mm. of aluminum. It is possible to burn a patient through any filter. The disease should be attacked from as many directions as possible, and all lymphatic areas in the directions of drainage should be thoroughly rayed. The rays should reach the mediastinum, for when axillary and supraclavicular metastases have taken place, there is great danger also of mediastinal involvement.

The total *duration* of the treatment will vary with the individual case, but will always extend over several months to a year or more. I commonly treat a patient for a few weeks actively, and then interrupt for a few weeks.

REMARKS.

In all instances, this treatment involves a struggle and a considerable expense, but when one realizes

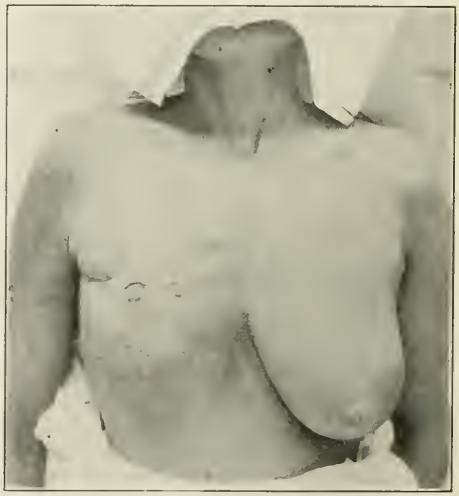


Fig. 4.—Case of Mrs. G., showing result of x ray treatment; ulcerating mass replaced by firm fibrous tissue.

that we are dealing with an otherwise hopeless class of patients, the results justify the effort. I do not know that any of these patients have been cured, and am not reporting them as such. I believe that no one knows absolutely when a patient is cured of carcinoma, no matter what the method of treatment may have been. In this group, an otherwise hopeless class of patients has been rendered free from symptoms of the disease from one to eight years. This report is not made to suggest the replacement of nor in any way to interfere with the operative treatment of carcinoma of the breast, but rather to supplement it, or offer hope to patients who are inoperable.

CONCLUSIONS.

1. In inoperable cases of carcinoma of the breast, x ray treatment offers a reasonable hope of relieving the patient of the symptoms of the disease, prolonging life, and possibly causing complete disappearance of the disease.

2. Patients have been relieved of the symptoms of the disease for from one to eight years.

3. No other method of treatment has ever accomplished as much in this class of patients.

4. A careful mastery of technic is essential to success.

1321 SPRUCE STREET.

INTRAVESICAL DIAGNOSIS AND TREATMENT.

With a Description of New Instruments.

BY LEO BUERGER, M. D.,
New York,
Associate Genitourinary Surgeon and Associate in Surgical Pathology, Mt. Sinai Hospital; Attending Surgeon, Har Moriah Hospital.

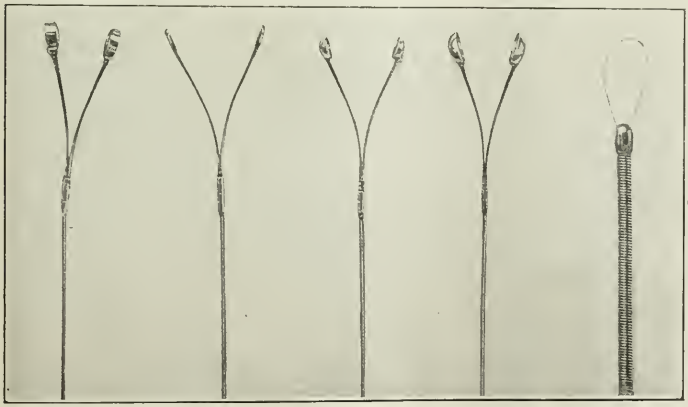
Although the optical and mechanical construction of the modern cystoscope has been considerably improved during the last few years, relatively little progress has been made in the technic of intravesical operative work. It is true that Nitze had already developed an ingenious operating cystoscope more than twenty years ago. This instrument, however, because of its complicated mechanism, its large size, and high cost, failed utterly to popularize those diagnostic and therapeutic measures that lesions of the bladder impose upon the cystoscopist. The tendency of late years has been toward the realization of simpler methods; and toward this end a number of workers have struggled, with the result that a multitude of devices for operative work have been proposed. Although some of the instruments, heretofore described, have considerable merit, most of them seem to be lacking either because of the complexity of their construction or because their small size and fragility restrict their utility to such an extent that they may be safely regarded as rather of theoretical than of practical value.

It was with a view to making certain operative procedures in the bladder feasible through the cystoscope that I began working some five years ago. It soon became apparent to me that the catheterizing cystoscope,[1] even though it was provided with a single catheter outlet (as suggested in previous publications[2]), would have to be modified so as to permit of the introduction of instruments of adequate size. Two types of operating cystoscope were then developed. One of these was provided with two sheaths (a convex and a concave) and its capacity was adequate for a No. 12 French catheter. The second type, the new model of which will be described in a future publication, was fitted with an angulated eye piece,[3] thus allowing the introduction of straight instruments. It is the first type of operating cystoscope which will appeal to the cystoscopist as being simple to manipulate and of sufficiently large capacity to carry useful operating devices.

In this paper I wish to call attention to the construction of those operating instruments that have been found most useful, both in the diagnosis and in the treatment of vesical lesions.

INSTRUMENTS FOR THE REMOVAL OF INTRAVESICAL TISSUE AND FOREIGN BODIES.

Although pathological changes of the vesical interior are, as a rule, not difficult to diagnosticate, there are certain tumors, ulcers, and rare lesions that will often tax the diagnostic acumen of even the most experienced cystoscopist. In such cases, we must apply to the bladder the same methods which are employed in surgical work, namely, *the excision* or *removal* of *pieces* for *microscopical examination*. Although a number of ingenious devices



A. B. C. D. E.

FIG. 1.—Working ends of operating instruments, natural size. From left to right: *A*, ring punch forceps; *B*, grasping forceps; *C* and *D*, small and large cup shaped punch forceps; *E*, snare.

[1] *Annals of Surgery*, February, 1909.

[2] Buerger: Concerning the Armamentarium of the Cystoscopist, etc., *American Journal of Urology*, September, 1911.

[3] Buerger: A Catheterizing and Operating Cystoscope, *American Journal of Dermatology*, May, 1911.

have been employed in the past for the purpose of securing pieces of tumors for pathological examination through the cystoscope, these instruments have been either too delicate for the obtainment of adequate portions of tissue, or, on the other hand, they have been so unwieldy, rigid, and cumbersome that their employment is not unattended with danger to the patient.

It was with a view to overcoming these difficulties that a special set of forceps, snare, and cutting instruments were designated. These have given me the utmost satisfaction, for not only can ample material be obtained with them (if they are correctly applied) but they also have a wide sphere of usefulness in intravesical therapy.

The various instruments resemble each other in their general assembly, being made up of a shank carrying a special detachable working end (or jaws) (Fig. 1), a spiral cannula (Fig. 2), and a handle. The flexible wire shank must be made sufficiently strong to bear the tensile force necessary to produce firm closure of the working end; and, on the other hand, the wire must not be so rigid that its flexibility is impaired, for the usefulness of all instruments of this type depends largely upon our ability properly to direct or bend them by means of the deflector of the cystoscope.

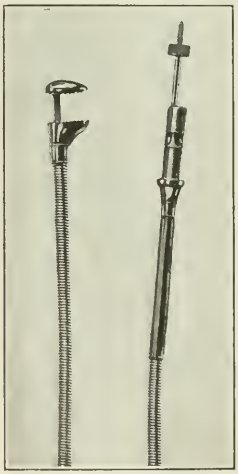


FIG. 3.—Miniature lithotrite.

The cannula (Fig. 2) is made of several sizes, being constructed of spirally wound, very flexible wire with reinforcement of the proximal end. The far end of the tube is capped by a rigid small metal tube, while the flexible end has a fitting which telescopes into the handle. The distal extremity serves for the proper closure of the jaws of the instrument, these being ensheathed as they are closed. For very delicately jawed instruments, small cannulæ will suffice, whereas in those cases where strong and rigid jaws are appropriate, larger cannulæ will be found necessary. For the purpose of simplifying the armamentarium, a universal handle was constructed. This was made as light as possible, so that when it hangs from the ocular end of the cystoscope, its weight is practically negligible, thus producing no interference with the delicate manipulations that are necesary for an exact and precise technic. By means of a scissor type of handle, a forward and backward motion is imparted to two of the upper arms, one of which holds the cannula, and the other of which serves for the attachment of the wire shank. When the scissorlike handles are brought together, the jaws attached to the wire shank are drawn into the cannula and thereby made to close. A fine tooth ratchet attached to the lower limbs of the handle serve to fix the jaws of the forceps in any position desired. Thus the forceps are locked, and the attention of the operator can be directed to the execution of other manipulations.

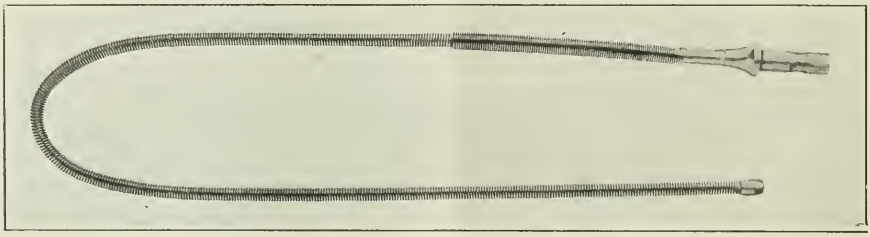


FIG. 2.—Spiral cannula.

The upper branches of the handle carry two movable receptacles. One of these holds the cannula, the other receiving the working shank. By means of a swivel joint, the latter makes possible the rotation of the shank, and hence the turning of the jaws.

For the removal of minute foreign bodies or small concretions in the lower end of the ureter, the type of jaws depicted in Fig. 1B is well adapted. The opposed surfaces are transversely corrugated, and the jaws diverge in a straight line and are without terminal teeth.

When pieces of tissue are to be removed for microscopical diagnosis or when small friable stones are to be crushed and removed, when gravel is to be extracted, when ulcers are to be excised, when mucous membrane of the ureteral ostium is removed for the diagnosis of renal tuberculosis,[4] and even for the avulsion of small papillomata, the two types of forceps of the pattern illustrated in Fig. 1 A, C, and D, are most useful. At the extremities of the diverging branches there are two semiovoid, slightly elongated, cup shaped jaws. Their cutting edges are fairly sharp, so that even pieces of mucous membrane suspected of pathological change may be excised in a sort of punch fashion. A smaller hemispherical cup shaped forceps is useful in the case of minute lesions (Fig. 1C).

MINIATURE LITHOTRITE.

In my hands, a working end larger than that just

[4]This new method for making a positive diagnosis of renal tuberculosis has been described in the *American Journal of Surgery*, February, 1913.

described has been found useful for the purpose of crushing small stones recently descended from the ureter. A crusher, built after the fashion depicted in Fig. 3, will often accomplish the crushing of ureteral calculi when the cup shaped forceps fails. The latter type is then useful for the removal of the fragments.

INSTRUMENTS FOR DILATING THE URETER.

Although dilatation of the ureter can at times be successfully accomplished by means of bougies and the insertion of two or three catheters simultaneously into a single ureteral orifice through the author's operating cystoscope, a new method was found to be far more effectual. This method consists in the application of the d'Arsonval current by means of metal olive electrodes introduced into the ureter, the indifferent pole being applied to the abdomen through a large metal plate.

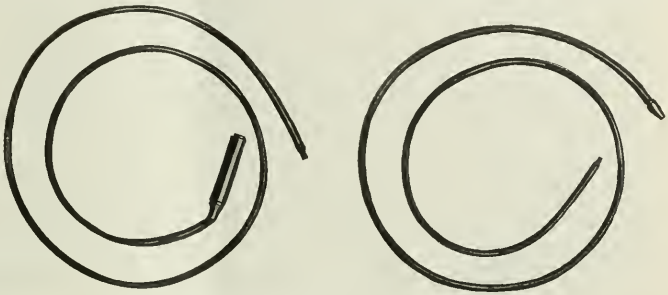


Fig. 4.—Electrode for method of d'Arsonval olivary dilatation.

The technic of this procedure and its utility as demonstrated in case of descending ureteral calculi will be described in a separate publication.[5] Here it will suffice to call attention to the very simple instrument necessary for the execution of the work.

A No. 9 or 10 French silk ureteral catheter serves to insulate a wire conductor, the proximal end of which has a plug for attachment to the high

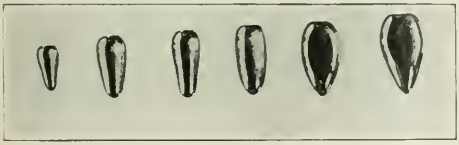


Fig. 5.—Olivary ends for dilatation.

frequency machine, the distal end being provided with a screw thread (Fig. 4). To the latter, metal olives of various sizes are attached in sizes varying from 6 to 18 French (Fig. 5). The smaller olives are ovoid with a tapering point; the largest ones are flattened so as to allow of their passage through the fenestra of the cystoscope.

Technic. The shank of the dilating bougie is passed into the telescope in the following manner: After the choice of a suitable rubber cap has been made, this is affixed to the catheter outlet of the telescope and the insulated conductor is introduced. The screw end is made to pass beyond the lens prisms of the telescope, and a suitable olive is attached. Just as in the case of the various operating forceps, the telescope is introduced into the sheath in such a manner as to permit the olive to enter in advance, the conductor being retracted just before the introduction into the ureter is begun.

[5] *American Journal of Surgery*, May, 1013.

THE INTRAVESICAL SNARE.

For the removal of papillomata and polypoid tissue, for the extraction of small stones and foreign bodies, and for avulsing papillomata, a specially constructed intravesical wire snare has been found of great value (Fig. 1D). The general assembly of the component parts of this snare is the same as that of the intravesical forceps previously described. The wire cannula is more flexible than that which is recommended for ensheathing the stronger varieties of forceps and can therefore be easily deflected. Indeed, it can be made of such small calibre that enough room is left in the operating cystoscope for the introduction of a single fulguration wire or catheter.

In order to form a wide loop, the distal end of the cannula is provided with a knob that is perforated by two diverging channels through which the wire emerges. These holes are made to separate in order to facilitate the development of an ample loop.

THE INTRAVESICAL KNIFE.

This simple instrument consists of a lance blade or scalpel fitted at the end of a flexible wire or spiral handle (Fig. 6) and is manipulated in very much the same way as an ureteral catheter. It was found useful in puncturing a case of closed ureter with ureterocele, and may also be found of value for ureteral meatotomy as a preliminary step when the ureter is to be dilated, and its orifice is abnormally small.

THE INTRAVESICAL SCISSORS.

Experience has taught me that the intravesical knife will not always suffice to cut the mucous membrane of the vesical interior because of the elasticity and toughness of this membrane. It was therefore found expedient to construct a scissor forceps which is particularly of value in incising the upper ureteral wall, when for any reason it is thought wise to do a preliminary ureteral meatotomy before proceeding to dilatation.

Fig. 6.—Intravesical knife blades; sharp pointed and blunt.

TECHNICAL CONSIDERATIONS.

Proper adjustment and assembly of the operating instrument. Before proceeding to use any of the

operating instruments, it is well to acquaint oneself not only with the details of the various components, but also with the proper adaptation and assemblage of the parts. If this is done, the delicate manipulations necessary for precise work after the instrument is in place in the cystoscope will become much simplified.

When forceps are to be used the assemblage and technic of introduction into the cystoscope should be carried out in the following way: The cannula, provided with a proper rubber tip, is introduced into the telescope through the catheter outlet, being pushed inward until its extremity lies at least one cm. beyond the lens prism (Fig. 7). A suitable working end with its shank is now inserted in reverse fashion and the handle securely attached (Fig. 8). Finally the adjusting screw of the wire shank is put into place and brought up until it meets the rotating or swivel mechanism.

When the parts have been thus assembled, it is well to test their working as follows: The scissor handles are closed until the jaws are in contact, attention being paid to the proper working of the ratchet. Then, with the jaws in any position, the swivel joint is tested. This mechanism has for its purpose the production of rotary movements in the working jaws. When removing a foreign body or a piece of a tumor or a lesion, the jaws may be thus turned in any direction desired. This obviates the necessity of moving the whole handle of the cannula or the cystoscope.

In a general way, the technic is similar to that employed in ureteral catheterization. For the proper execution of the necessary manipulations, the following mechanical points must be observed: First, the comparative rigidity of the flexible cannulæ compared with the ureteral catheter; second, the comparatively large size of the cannulæ; third, the limitations in the strength of the deflector of the cystoscope; fourth, the recession[6] of the jaws as they are made to close; and, fifth, the advantage of working at close range, even though the technical difficulties are thereby enhanced.

The rigidity of the cannula must be borne in mind when attempts are made to deflect it, particularly when we wish to reach objects at long range. It is often expedient, therefore, to make excursions with the shaft of the cystoscope, lifting the ocular up so as to compensate for lack of inclination of the cannula. The relatively large calibre of the cannula as compared with the ordinary ureteral catheter is responsible for the fact that the field is obscured for a time during the early manipulations. The jaws, too, if they are permitted to lie in front of the lens prisms, would also have the effect of interfering with the view. It is therefore wise to

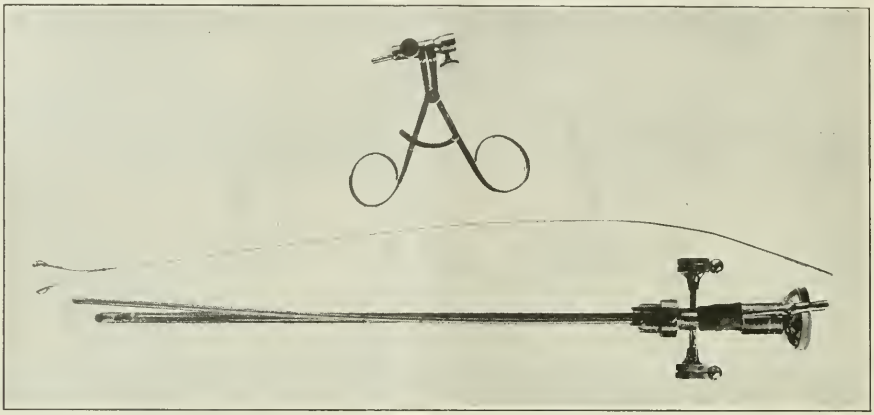


FIG. 7.—Telescope with spiral cannula attached, preliminary to introduction of forceps and affixing of handle.

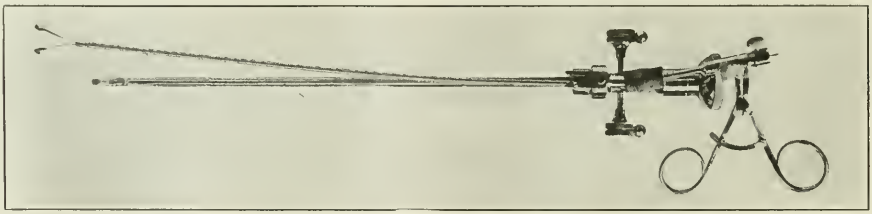


FIG. 8.—Telescope and forceps assembly, the jaws being open when handle is attached.

[6] In newer models, now being tested, the recession of the jaws has been obviated.

draw the jaw into the sheath while the object of our search is being located. It is only in the case of the very largest type of jaw that we are forced to leave them project in part into the field.

In the manipulation of the lid, too, care must be taken that deflection is gradually produced, for very sudden movements of the deflector may cause the wire tractors to become loosened and dislodged. A special fixation screw has been provided to secure the deflector in any desired position.

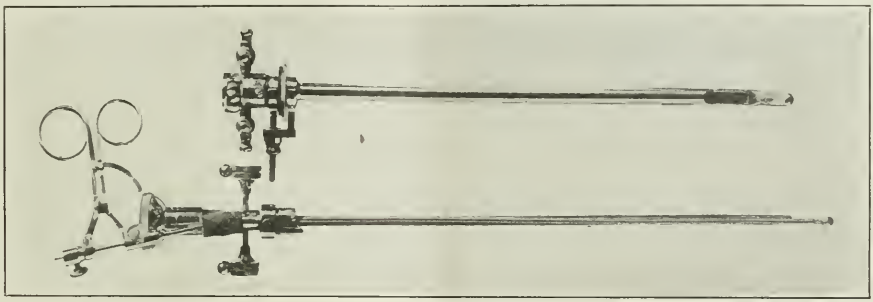


Fig. 9.—Sheath of operating cystoscope and telescope with forceps locked and in "advance position" for introduction into sheath.

Another difficulty that we must combat in the use of forceps of the type here advocated is due to the type of mechanical closure employed. The jaws are made to shut by receding into the distal end of the cannula. It will therefore become apparent that when they are open and in contact with the tissue to be attacked, a compensatory forward motion of the cannula or the cystoscope is required lest the jaws recede from the object to be seized.[7]

Because the necessity for deflection becomes progressively less as the vesical wall is approached, working at moderate range is recommended. It is true that certain technical difficulties become thus enhanced. However, these can be overcome with a little practice. We must try to subdue our desire to see a large part of forceps and cannula in the field at the same time, contenting ourselves with seeing the jaws and a small portion of the cannula. Even in cases where a portion of the jaws remain out of view, we will learn with a little practice that as the object is being ensnared an excellent view of the closing jaws can be obtained.

The introduction through the cystoscope of instruments in sizes much larger than the capacity of the catheter outlet would admit, is made possible by giving the working end or jaws a suitable form and by a variation in the technic of introduction. Thus the fenestra can be made to permit of the passage of comparatively large jawed forceps if the latter are introduced in the closed position and if they are flattened in one diameter. Then again it is expedient to ignore the catheter outlet altogether by introducing the forceps in the following way: The flexible spiral cannula is first fitted with a rubber cap, and then introduced through the outlet into the telescope (Fig. 7). The handle is now affixed and the operating jaws selected for the given case are introduced in retrograde fashion (Fig. 8). After securing the jaws and locking them, they are made to occupy a position at least one cm. beyond the distal end of the telescope, and are made to enter the sheath in advance of telescope (Figs. 9 and 10). In this simple way the problem of using grasping and cutting instruments of large size was solved.

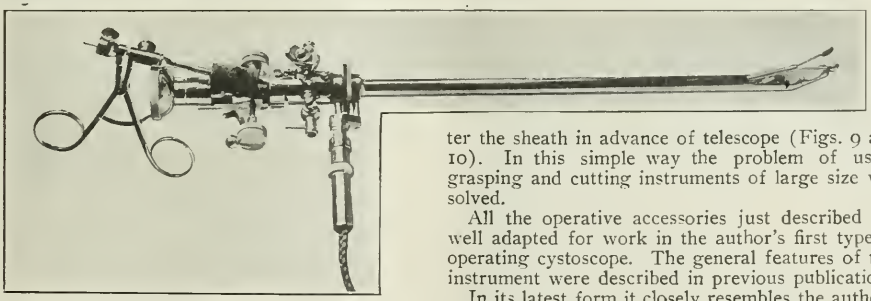


Fig. 10.—Complete assemblage with forceps deflected and ready to grasp tissue situated in roof of the bladder.

All the operative accessories just described are well adapted for work in the author's first type of operating cystoscope. The general features of this instrument were described in previous publications.

In its latest form it closely resembles the author's catheterizing and irrigating cystoscope for routine work, except that the sheath is oval. Two types of sheath are supplied, the convex with the lamp on the side of the convexity of the sheath, and the concave with the lamp on the opposite side. Just as in the catheterizing instrument, the convex type is useful for near work in the region of the sphincter, whereas the concave type has a wider sphere of usefulness, being adapted not only for work at a distance (in the retroprostatic pouch and in the vault).

[7] More recent models which are now being thoroughly tested will soon be perfected. The jaws of these instruments will not recede as they are closed.

but also at close range if the sphincteric region is excepted.

The telescope is of the same calibre as that of the catheterizing telescope, its lid, however, being somewhat smaller. The catheter outlet (or outlet for operating instruments) is large enough to admit a No. 12 French catheter, and there is ample room for the passage of large operating instruments. The catheter outlet, too, is so fashioned that it has a minimal curve, thus permitting even straight instruments to enter, provided that their distal portions are flexible.

With this armamentarium we can not only amplify and enrich the diagnostic data that may be gained by mere observation cystoscopy, but therapeutic procedures can be carried out with ease, precision, and certainty. For purposes of the ablation of tumors, for the excision of callous refractory ulcers, for the dilatation of strictures of the ureter, for expediting the passage of ureteral calculi, for the removal of foreign bodies and calculi, for the cure of papilloma by a snaring process, and for the diagnosis of renal tuberculosis by microscopical examination of excised pieces of the ureteral orifice, the instruments above described have been found indispensable.

40 East Forty-first Street.

OPERATION, WHEN REQUIRED, IN ALL COMMON RECTAL DISEASES, WITHOUT GENERAL ANESTHESIA OR PAIN.*

By Waters F. Burrows, M. D.,
New York.

My subject, in its application to those suffering with anorectal affections, has reference to conservative surgery in a region heretofore often mutilated by methods justly termed radical. Although formerly using general anesthesia in these cases, the writer, during the past few years, has found it preferable, when required, to operate in all cases of hemorrhoids, fissure, anal ulcer, pruritus ani, and spasmodically contracted or hypertrophied sphincter ani muscles, leading to constipation or anal neuralgia, cryptitis or fistula originating in the same, without the use of ether or chloroform, and the resulting cure has been complete and more satisfactory than that following the usual radical procedures. In addition, ischiorectal abscesses are opened under local anesthesia, and most other cases of fistula, as proved by the development of the technic of these rectal operations, can likewise be thus painlessly and thoroughly operated on. In short, experience shows that in over ninety-five per cent. of all rectal and anal diseases requiring surgical intervention, with the exception of cancer, extensive, generally "horseshoe" fistulæ of long duration, and complete prolapse, the general anesthetic should be avoided. Following these operations under local anesthesia, which are carried out in the office, the patients, without pain or laying up at any time, proceed to hotel or home, returning the next day for dressing of the wound.

*Read before the Stamford Medical Society, March 11, 1913.

Many patients afflicted with anal and rectal disease become debilitated by these affections and suffer from indigestion, poor nutrition, and lessened resistance to bacterial invasion, and a general anesthetic for these individuals has additional danger. A relatively large number are attacked by tuberculosis in some form, and although the writer contends that most fistulæ are nontuberculous in nature, yet when this disease is present or when a dormant tuberculosis of the lungs exists, general anesthesia has frequently most unfortunate results in lighting up the process, spreading it throughout the body, and, locally, increasing the difficulty of accomplishing a radical cure.

There are three sequences of anorectal operations done under general anesthesia which are absent when such procedures are performed under local anesthesia. Whereas with the former, shock and reflex impulses are so marked that voluntary micturition is frequently impossible for a day or more, requiring catheterization of the patient with its concomitant dangers of cystitis and kidney infection, with the latter no such difficulty is encountered, and,

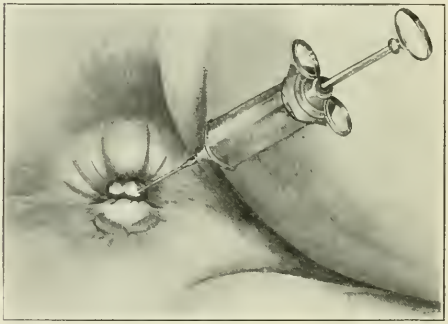


Fig. 1.—Injection of the anesthetic solution into an extrointernal hemorrhoidal mass.

in the writer's practice, without exception, voluntary emptying of the bladder is possible. Second, the loss of weight and strength which accompany the use of ether or chloroform, due both to the toxic effect of the anesthetic and the enforced confinement to bed, is entirely absent following operations performed by the writer's method, which necessitates no toxemia nor confinement. Lastly, the indications for making the bowels constipated for a period of two to four days or more, thought so necessary in major operations performed for minor rectal conditions and leading to abdominal discomfort, distention, and perhaps autoinfection, are rarely present.

The ideal solution for local anesthesia is easily sterilized, effective, nonpoisonous, and one which causes a minimum amount of postoperative reaction and pain. Cocaine, novocaine, tropacocaine, betaeucaine, stovaine, alypin, quinine and urea hydrochloride, saline, or distilled water may be used. Novocaine is satisfactory, and, in a 0.25 or 0.5 per cent. solution, as generally used, is a safe anesthetic. Quinine and urea hydrochloride, satisfactory in selected cases, causes undue swelling, at times slough-

ing, and delayed repair at others. The use of saline or sterile water in producing analgesia has been not a small source of wonder to the lay community. However, since the anesthetic effect of these injections is due to and only accompanies overdistention of the tissues, which may cause pain, and persists for a most limited duration of time, its use here is subject to many restrictions. They are unsatisfactory in that large group of cases where inflammation is present, and therefore specific anesthetic solutions, not sterile water nor saline, are preferably used for producing the local analgesia necessary when operating for fissure, ulcer, fistula, or contraction of the sphincter muscles. Freezing mixtures, ethyl chloride, for example, are of service in momentary procedures, such as opening an abscess cavity, or preliminary to the introduction of the needle used for the anesthetic. Spinal anesthesia advocated by some authorities for these operations, on account of its dangers should never be used.

For the correct and complete performance of rectal operations under local anesthesia, a thorough knowledge of the anatomy and physiology of the rectum and anal canal is requisite, and certain heirlooms of the past must be discarded. For example, textbook authors and teachers have long elaborated upon the necessity when cutting the sphincter ani muscles to do so at right angles to their fibres in order that their functions be retained, and not obliquely, which has been assumed to be the origin of rectal incontinence when occurring, neglecting to emphasize the far more important factors of preservation of nerve supplies. In not a few instances, as a result the anal canal has been practically surrounded by incisions, opening horseshoe tracts for example, nerves have been severed indiscriminately, and the vain hope entertained that, with the sphincter uncut or cut only at right angles to its fibres, bowel control would be retained. In these cases incontinence has ensued and the mental and physical state of the patient has been made far worse than it was before.

Pathological conditions of the rectum demanding operation are not as numerous as those of the anal region. The rectal valves in the past have been frequently accused of sclerosing and ulcerating, leading to constipation, but this is rarely the case. When necessary, however, they may be divided through their free borders by means of a pressure clip or ligature, which devitalizes the tissues and falls off in the course of a few days. The resulting proctitis may temporarily stimulate the rectum and cause soft bowel evacuations, but permanent cure thereby of constipation is not attained. The usual variety of rectal prolapse, which consists in an extrusion of mucosa largely derived from the upper anal canal and lower rectum is readjusted, and polyps are readily removed under local anesthesia by ligating and cutting away the redundant or hypertrophied tissue.

The modified covering of the anal canal, its unique structure, together with the traumatism to which it is liable through bowel evacuations, passage of foreign bodies, and infection or injury coming from without, make inflammatory processes common. Ordinarily the lining membrane stretches sufficiently, although not to the same degree as the

Fig. 2.—Abnormal anus. It is tight, and the sphincter muscles bulge without relaxing when the patient strains. Under local anesthesia, division, not divulsion, of the strictured canal is carried out.

surrounding skin, to prevent tears, but with continued congestion and infiltration an abrasion may result upon the passage of hardened bowel contents, leading to a fissure perchance, which heals, or, persisting, may become tuberculous, or, as usual, remain simply inflammatory. Any denudation or ulceration of the mucosa permits deeper infection to take place, which may progress to abscess and fistula. Concomitantly there develops spasm of the anal musculature, which if continued leads to more or less permanent induration and hypertrophy of the muscles involved, and to increased difficulty of bowel evacuation.

Instead of starting as an abrasion, or as the result of chronic congestion dependent upon hepatic engorgement, excesses in eating or drinking or other general cause, Ball has pointed out that there exists a potent and frequent etiological factor of localized disease in the presence of the anal crypts. There are from six to ten of these small pockets, their openings pointed upward, just above Hilton's white line (the site of juncture of modified mucosa and skin). The free borders of these valves are endowed richly with nerve fibres which give anal sensation to the canal. At the attached ends the

Fig. 3.—Pruritus ani. The skin is macerated, swollen, thrown into folds, lessened in elasticity, and has lost its pigmentation. Itching is worse at night. The writer's operation, based upon the theory of Ball, consists in dividing subcutaneously the nerves involved, working through two or three small cutaneous incisions, and is done without pain or laying up of the patient. Relief is immediate and cure permanent.

FIG. 4.—Director passed through fistulous tract, after production of local anesthesia and previous to division of overlying structures.

valves terminate in the columns of Morgagni, slightly raised ridges running longitudinally in the lower rectum and upper anal canal. With continued irritation the edges become hypertrophied, forming distinct papillæ, often half an inch long, and become a frequent source of anal affections.

Although to the anal valves have been attributed the functions of mucus formation and lubrication thereby of the canal, the writer believes that quite a different purpose is subserved. In short, the anal canal to be normal must be kept dry and completely evacuated when at rest. Continued moisture macerates the tissues, rendering them more liable to infection and traumatism, whereas, with the retention of bowel material, a source of chronic irritation exists. The external sphincter muscle, under control of the will, makes it possible voluntarily and thoroughly to evacuate the anal canal, provided that, in addition, the bowel movements are formed, whereby this muscle can effectively act upon the mass. The valves placed at the upper part of the canal, when not diseased, supplement the functions of the internal sphincter muscle in preventing secretions or small particles of bowel contents from constantly escaping from the anus. Such delicate structures, however, in a region exposed to traumatism and infection, are often injured by bowel contents of abnormal consistency. The hypertrophied papillæ, already mentioned, may prolapse, making the valve action ineffectual, continued irritation may involve finally the entire anal canal, or the crypts may become deepened or torn, incapable of natural emptying, chronically irritated, the retention place of inflammatory products, and lead thereby to localized abscess, which, extending, becomes ischiorectal, and discharging, internally or externally, forms a fistula, usually complete, although the internal opening may be temporarily blocked or healed over.

Venous vessels forming tufts upon the columns of Morgagni, often early become varicose with resulting pile formation. The area involved is readily distended with the anesthetic solution, and if not already prolapsed by the patient through straining or the injection of a small enema to be expelled at once, the swollen anesthetized tissue may be brought into view by means of the writer's rectal tractor, by a clamp placed upon it and eversion, or by his vacuum apparatus, after which various methods of removing the hemorrhoids may be used. However, it is best to avoid the clamp and cautery, which is painful, and the Whitehead operation, which is mutilating, destroying anal sense to a large degree, and nearly always results in constriction at the anus, if actual stricture does not occur, and in eversion of the mucous membrane, causing constant circumanal moisture and itching. On account of the danger of stitch abscess, extension of the inflammation to surrounding parts, and fistular formation, the writer does not advocate the removal of rectal tissue with the subsequent suturing together of mucous surfaces over the denuded area. The preferable method of removing *hemorrhoids*, hypertrophied anal papillæ, when the latter cannot be simply clipped off, rectal polyps prolapsed through the anus, and other nonmalignant pathological tissue in this region, is by longitudinal incision to either side of the mass and below, so that the resulting scar will be more or less lineal, thus avoiding any tendency to stricture formation frequently present when cicatricial tissue surrounds the lumen of the bowel. This procedure results also in placing the ligature, which ties off the pedicle of the hemorrhoid, at the upper part of the anal canal, generally in fact in the lower rectum, where its presence is not a source of irritation to the more sensitive anal structures below.

There is a distinct and limited field for the use of carbolic acid solutions in the treatment of purely internal hemorrhoids. The procedure, when correctly carried out, is without pain, and in selected cases produces a rapid and safe cure, but the results are not always permanent, and the writer almost without exception would advise that the method be supplanted with more rational surgical procedures.

Constipation, when due to anal inflammation or

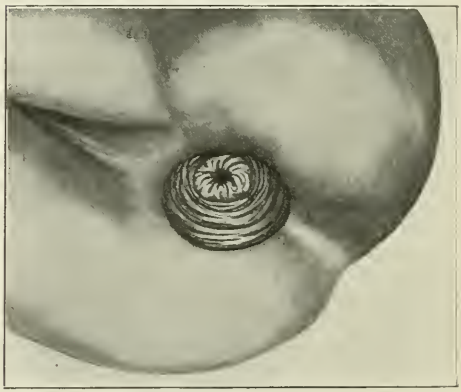


FIG. 5.—Complete rectal prolapse, unsuitable for operation under local anesthesia. Habitual prolapse in children, although a minor surgical condition, demands the use of a general anesthetic for its operative cure.

obstruction, *fissure, ulcer, anal neuralgia, cryptitis,* and painful conditions leading to *spasm and hypertrophy of the sphincter ani muscles,* are completely cured, in almost every instance, through division or partial division of these muscles. This is preferable to divulsing or stretching the structures, which not only requires a general anesthetic, but excessively traumatizes the entire anal canal, and, although relieving temporarily through putting the parts at rest, is generally followed by a reformation of a tight anus, predisposing to a recurrence of the anal disease.

Pruritus ani, a stubborn affection, in a certain number of cases can be permanently relieved by applications to the anal and rectal mucosæ, lessening the mucoid catarrhal discharge, which causes maceration of the parts and renders them more susceptible to low grade infections. Likewise bowel regulation, the avoidance of cathartics, and the attainment of formed bowel movements are important. Where simple prophylactic applications and symptomatic treatment of the itching areas fail to stop the process, removal of skin tabs, hypertrophied anal papillæ, slitting down, and thereby opening deep retention anal crypts, or a Ball operation can be satisfactorily carried out. The writer has had marked success in the radical cure of anal itching through means of his operation, a modification of the Ball technic, performed under local anesthesia, wherein the nerves supplying the affected area are severed in the subcutaneous tissue. The operation requires less than five minutes to complete, is carried out in the office, and gives immediate relief and a permanent cure.

Fistula in ano is a condition more difficult to relieve by radical operation under local anesthesia, unless one has had considerable experience, not only in finding the internal opening previous to operation and in anesthetizing the affected area, but also in determining the minimum and maximum which must be done. Many contend that all such operations must be performed under general anesthesia, and the fistulous tract thoroughly dissected out, and, with this latter point in view, the ramifications of the fistula are colored by injecting methylene blue, potassium permanganate, argyrol, collargol, or other such substance, so that at operation the entire tract may be found and opened up or dissected out according to ideas of the operator. But to show how unnecessary such extensive procedures are, one has only to recall the perfect results where this widespread removal of tissue has not been done, and those other instances where it has been impossible, on account of the danger of injurying important structures, to remove the stained areas. In one respect opinion is unanimous: The internal opening, if present, must be laid open by cutting the fibres of the internal and external sphincters lying over it, or the fibres of the external sphincter ani where the tract passes between external and internal muscles.

The writer's experience shows that all anorectal fistulous tracts can be completely healed by operating under local anesthesia, without causing the patient pain or laying him up, provided they have not been previously tampered with and operated upon until complications have ensued and masses of scar tissue have formed. Even in these apparently unfavorable cases the writer has repeatedly found it possible to cure the condition without the use of a general anesthetic.

In addition to the purely local *rectal ailments* there are others, either *secondary to pelvic or genitourinary inflammations,* or causing the most marked effect upon these parts, and manifested by reflex pains in the back, down the thighs, in the calves of the legs, discomfort, and a feeling of moist coldness locally, painful micturition, or neurasthenic phenomena. Upon examination an anal abnormality may be discovered, at first perhaps only congestion, which may lead later to more serious rectal trouble, causing in turn increased pelvic or genitourinary inflammation, prostatic fullness, and urethral discharge, dysmenorrhea, amenorrhea, menorrhagia, or leucorrhea. Even where the rectal condition is a secondary process, procedures under local anesthesia, as indicated, will relieve some of the most discomforting complications of disease located primarily in the genitourinary tract.

In this communication little has been said of *constipation,* since as a rule anal diseases are not its primary cause, but its frequency as an etiological factor leading not only to indigestion, nausea, and headaches, but also to hemorrhoids in particular, makes a word concerning this sequence of events necessary. As the writer has shown in his work, and has brought out in another paper, constipation is usually based upon one of two fundamental factors; *inflammation* in some part of the gastrointestinal tract (gastric or duodenal ulcer, appendicitis, cholecystitis, diverticulitis), leading to reflex spasm and slowing down or actual stoppage of the fecal current, or *mechanical obstruction,* situated, as the pain complained of by the patient indicates, in the lower abdomen on the left side (sigmoidal obstruction, most frequent), in the lower right abdominal quadrant (cecal, or ileocecal obstruction, less frequently ileac alone), at the hepatic or splenic flexure, or in the epigastric region, where adhesions surround the pylorus, constriction exists, or a displaced stomach interferes with its power to empty. In all these conditions constipation is an early manifestation and one frequently neglected until recovery through medicinal means and without operation is impossible. In time a colitis follows, often of the mucous type, with autointoxication and indicanuria, the liver is overburdened with toxic material; it becomes congested, and the accompanying fullness in the portal circulation is transmitted to the hemorrhoidal veins which empty into this system, with the consequent development of piles. The chronic congestion and inflammation at the anal canal soon make possible other anal diseases, such as fissure, cryptitis, fistula, and pruritus ani. It is evident, however, that when constipation causes the anorectal condition, and not the latter the former, as may occur, the operative cure of rectal ailments should be secondary to correction of the abnormalities leading to bowel irregularity, although, even under these circumstances, the minor affection may be the more annoying and, when eradicated, may lead to a symptomatic cure.

CONCLUSIONS.

To summarize, local anesthesia will lead to less delay among patients in obtaining the relief, which, on account of the fear of pain or in the supposition that the use of a general anesthetic is required, they have neglected to secure until complications have frequently ensued and the health has suffered. When one comprehends that there are but three or four rectal and anal cases in a hundred, apart from cancer, which do not permit of ready relief and cure through operation, if required, performed under local anesthesia, there will no longer exist uncertainty in regard to the proper procedures to advise. Only too often in the past has dissatisfaction arisen over confinement, prolonged and exceeding the time thought necessary, and, although there are but few patients operated upon who have the experience to judge of these factors, yet, if you will carry out this line of work in your practice, you will save the sufferers time, and the pain and the anxiety which are usually associated with rectal surgery as done under general anesthesia.

40 East Sixty-second Street.

A SINGLE CASE OF VITILIGO.

By Nathan T. Beers, M. D.,
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In Schamberg's *Diseases of the Skin and the Eruptive Fevers*, there is a photograph of a colored woman suffering with vitiligo. Of all of the splendid illustrations in this book, few are more spectacular or pleasing than this one. I have referred to it so many times that it has become one of the fixed images in my mind, coming before me whenever a case of vitiligo presented itself in the office or clinic. In the legend beneath the picture, Doctor Schamberg has stated: "Some of the white patches have later become partially restored with pigment." This statement is so at variance with the usually accepted prognosis in such cases and so opposite from the course of the disease in all of the cases which have come under my personal observation that I have often wondered at it.

Fig. 1.—Front view of case of vitiligo.

I was greatly pleased when, lately, Dr. A. R. Paine, the senior visiting physician to the Brooklyn Hospital, turned over to my service the woman whose pictures appear herewith. She was brought into the hospital in the ambulance in an unconscious condition following an epileptic attack. She is forty-three years of age, a widow; has had thirteen children, nine of whom died from pneumonia. She gave a history extending over a period of twenty years, during which time the white areas on her body have steadily increased in size. I at once recognized in her the subject of Doctor Schamberg's photograph, and made arrangements to secure the new pictures which I herewith present.

Fig. 2.—Back view of case of vitiligo.

It will be seen that the disease has been steadily progressing. The hair is still perfectly black and kinky, the forehead is almost entirely white, the chest shows an extension of the white area down to the nipples, while the hands and feet and most of the forearms and legs are devoid of pigment. The patient readily assented to being photographed, and stated that she had been photographed many times when she was travelling with the circus. If there are other pictures of this woman in existence to-day, it would be interesting to have them brought together with the photograph shown in Doctor Schamberg's book and these of to-day, which I present. The pigment, in this woman, is darkest on the face, shading off gradually to a creamy brown on the legs.

97 Gates Avenue, Brooklyn.

ORBITAL CELLULITIS.*

A Fatal Case Following Disease of the Accessory Sinuses of the Nose.

By Alfred Wiener, M. D.,
New York.

It is a well known fact that the nose and its accessory cavities are etiologically responsible for many of the orbital and ocular complications with which we meet. The antrum of Highmore, the anterior ethmoidal cells, and the frontal sinus are in close proximity to the floor, inner wall, and roof of the orbit. On the other hand, the posterior ethmoidal cells and the sphenoidal sinus are in immediate contiguity to the posterior half of the inner wall, the posterior part of the floor and roof of the

*Read at the December meeting of the Section in Ophthalmology, Academy of Medicine, New York.

orbit, and optic foramen. When disease exists in these sinuses, infection may be carried into the orbit, either through the vascular return which empties into the superior and inferior ophthalmic veins, or by caries and destruction of the intervening bony wall. Dehiscences, gaps, and defects in the osseous floor of the frontal sinus or lamina papyracea of the ethmoid may also permit infectious material to find its way into the orbit.

A case of this nature which recently came under my observation and which presented features of especial interest is the subject of this paper.

Case. S. P., forty-six years of age, a merchant, married, father of four children, had suffered from vague pains over the right side of his face for a number of years, but never gave it much thought. About the middle of June, three weeks previous to the time that I first saw him, the pain became severe. At first it involved the right cheek and forehead, and then localized itself in, and back of the eyeball. Both the lower and upper lids became swollen and the eye was distinctly reddened. Movements of the eye aggravated the pain. He was under the care of his family physician, a keen and competent observer, who at once recognized the serious import of these symptoms. Patient was advised to consult a nose and throat specialist. As some relief was obtained through the measures advised by the family physician, patient prevailed upon his doctor to continue with this treatment, and wait for more urgent symptoms before consulting some one else. The pain, however, did not disappear entirely. The edema, which at first occurred only periodically, now became a more permanent feature. With his inability to attend properly to his business, and after a rather sharp and severe attack of pain, he was finally persuaded to consult a specialist. The patient appeared at my office July 5th presenting the following status:

A well nourished man of exemplary habits, with no history of any venereal or tuberculous trouble. On the morning I first saw him he complained bitterly of pain in and about the right eye. There was distinct edema over the lower lid and on the right side of the nose, representing the ethmoidal region. The movements of the eye were unimpaired but distinctly painful, especially when the patient was told to look toward the left. Pressure over the ethmoidal region and over the antrum was exquisitely painful. The same was noticed over the eyeball and over the teeth. There was some photophobia, but the pupil reflex to light and convergence was normal. The vision was unimpaired, registering 20/20 without the assistance of glass. The field was normal, there was no central scotoma, but there was a suspicion in my mind that the blind spot was slightly enlarged. This could not be accurately determined, as the patient became rather restless under the examination. An examination of the nose revealed the following: A most disagreeable and almost overpowering odor; a sanious and brownish, more or less purulent discharge was found covering the floor of the nose, inferior turbinated bones, and issuing from the middle meatus. The middle and inferior turbinated bones were hypertrophied, boggy, and in a state of polypoid degeneration. The pharynx and nasopharynx looked glazed and were covered with dark brownish scabs. As there had been no tenderness over the frontal sinus nor any symptoms present to point toward involvement of this cavity, it was not deemed wise to probe or inspect it in any way for fear of infection. This proved the correct procedure, as the operation later demonstrated. On transillumination the contrast between the two sides was very evident; the right side appeared distinctly darker than the left. There was no pupillary red reflex nor was there present the crescent of light under the lower lid so characteristic of the normal condition. Over the frontal sinus on both sides good transillumination was obtained. The temperature was 100.3° F.

I decided under these conditions to puncture the antrum in order to ascertain the nature of its contents. This was readily accomplished through the inferior meatus. A vile smelling fluid escaped through the trocar. It was brownish in color and, while at first fluid, soon clogged up the tube. The antrum was now washed out with normal saline solution, and more of this ill smelling fluid, together with a mass of dirty whitish clumps, was obtained. The whole clinical picture as well as the findings within the nose, left no doubt that we were dealing with an acute exacerbation of an old chronic ethmoiditis, in addition to an old chronic empyema of the antrum. The threatening, in fact the already suspicious symptoms within the orbit influenced me to advise the patient that a radical operation upon the antrum and ethmoidal region was urgently indicated. He was told to return home until his family physician could be consulted. On the evening of this same day the pain in the orbit became very severe and the edema over the lids more marked. The pain became so excruciating that morphine injections had to be resorted to.

I saw the patient on the following morning at his home. There was all the evidence present now of an orbital cellulitis, almost complete limitation of the movements of the eyeball, photophobia, and marked chemosis, with an intense edema of the upper and lower lids. Vision was good. The pain was intense, and all the portions about the orbit extremely sensitive to pressure. The temperature was 101° F. and there was a slight tachychardia. That same evening, in addition to the foregoing symptoms, the sight began to fail. An approximate examination of the field showed recognition of objects only in the lower and outer field. The hand movement could be seen in this part of the field at about four feet. An examination of the fundus showed dark tortuous veins and narrow arteries upon what looked like an intensely edematous membrane. It had very much the appearance of a detached retina. There were a few scattered hemorrhages, linear and flamelike in shape. The disc was only slightly blurred. On the following morning the patient presented the classical picture of a phlegmonous type of orbital cellulitis. The vision was entirely gone. The eyeball was in complete fixation. A slight exophthalmos with an intense edema of the upper and lower lids and marked chemosis were present. The fundus picture was about the same, with the exception of a few more hemorrhages and the disc more swollen, measuring about three diopters. The clear mentality of the patient, the absence of cranial symptoms, and the perfectly clear cornea certainly did not as yet make one feel absolutely sure about a cavernous sinus thrombosis.

In the presence of such a condition as above related only the most radical measures could be expected to offer any relief. In consultation with a colleague it was agreed that a complete exenteration of the ethmoidal cells as well as the antrum should be performed at once. The patient was removed to St. Luke's Hospital and I operated upon him that same evening. The ethmoidal region was first attacked. Both anterior and posterior cells were found completely broken down and filled with a mass of granulation tissue and small polypoid masses. Some were distended with a mucopurulent secretion, others with almost pure pus. No direct communication was found between these cells and the orbital cavity, but pus was close up to the orbital periosteum. A culture made from this showed pure streptococci. A small opening into the frontal sinus revealed the absence of any disease. The antrum was opened from the canine fossa and we found it almost filled with cholesteatomatous masses. It was unusually large, holding, I should say, about three ounces of the fluid. This may have been brought about through the action of the cholesteatoma upon the alveolar and cancellous tissue of the palatal processes. Unfortunately in this case no x ray photograph was taken, so that a comparison might have been made with the other side. The anterior wall was almost completely removed in order to deal thoroughly with the antrum. It was curetted of its entire contents. As the patient had been on the operating table almost one hour and a half, had lost a great deal of blood, and was beginning to show the effects, it was decided for the present that suffi-

cient had been done to relieve him. An examination of the walls of the antrum showed no defect or erosion, due, as one might expect, to the cholesteatoma. The cavity was packed with iodoform gauze, but not sewed up. It was my intention to watch it, before establishing drainage through the nose. An examination of a culture made from the ethmoidal cells showed streptococci, that from the antrum was uncertain and not identified.

This exenteration of the ethmoidal cells and the antrum had practically no effect upon the desperate condition of the patient. On the second day after the operation the temperature reached 105° F., and the patient appeared extremely ill. It was no longer possible to make an examination of the fundus. The exophthalmos was a trifle more evident. The chemosis and edema were intense. The edema had now spread over the lateral portion of the forehead and to the lids of the opposite eye. A gangrenous area had appeared over the conjunctival portion of the outer part of the orbit, and a small abscess over the inner portion. The pain was excruciating. An examination of the fundus of the left eye was negative, and the vision normal. As the right eye was absolutely lost, and as we feared that the process was spreading rapidly toward the cranial cavity, if not already having reached it, it was deemed advisable, in the hope of checking the process, to exenterate the entire orbit. In this opinion I was upheld by a colleague who was called in consultation, and who also advised taking away the lateral wall. The complete exenteration of the orbit was done on July 11th. The entire contents of the orbit were found matted together and dotted here and there with minute abscesses. Near the apex was another gangrenous focus. The nerve lay entirely bare within its sheath surrounded by a sanious fluid. The orbital lining was intact, showing again no necrotic areas nor the slightest sign of any invasion from its neighboring sinuses. The lateral wall was removed in order to get at the pterygoid region, but nothing was found of any importance. The next day the temperature dropped to 101° F. The patient felt more comfortable, and appeared to be holding his own until the fourth day after the operation, when the temperature again rose to 104.4° F. His mentality was good, but there was more pain. The odor in the antrum as well as the orbit was again becoming vile in spite of the fact that dressing powder was used and the cavities were cleansed twice daily. The gangrene at the apex appeared to be spreading, and the walls of the orbit began to exfoliate. An autogenous vaccine which had been made was used for the first time. On the following day the temperature dropped to 100.2° F., but rose that same evening to 104° F. Notwithstanding the fact that the vaccine was continued, and large doses of hexamethylenamine given, the patient gradually passed into a septic condition. The blood cultures made were negative. Forty-eight hours before the patient died he presented the picture of meningeal involvement. The lumbar puncture substantiated this. Every effort was made to control this pyemic condition. The attack upon the cavernous sinus according to Levinger, of Munich, was considered, but in the presence of such a virulent sepsis, and with the possibility of endangering the other eye, it was not considered justifiable. The patient finally succumbed eight days after the second operation to what appeared to be a purulent meningitis. No autopsy was permitted.

PATHOLOGICAL REPORT.

Dr. F. C. Wood, pathologist of St. Luke's Hospital, submitted the pathological report, as follows:

Macroscopical. Specimen consisted of eye, which was received in formaldehyde solution with the muscular attachments and about 10 mm. of the optic nerve. The cornea was cloudy, the anterior chamber and lens appeared normal. The retina was edematous and in some places elevated from the choroid. The outer coats, muscle tissues, and nerve were edematous and flabby, the nerve being a mere soft string. The exudate covering the muscles and fat was tenacious. No pus was noted in the interior of the eye on close examination.

Microscopical. The orbital fat contained numerous small abscesses with infiltration of the fibrous and fatty tissue with pus cells and fibrin. The smaller bloodvessels contained thrombi. Edema of the tissues was very marked, and there were evidences of proliferation in the fibroblasts of the interlobular septa between the areas of fat tissue. Around many of the capillaries there was a ring of extravasated leucocytes lying in a fibrous network. Bacteria were numerous in the stained sections. The sclerotic coat of the eye was edematous and infiltrated with leucocytes and red cells. In places there were an enormous number of bacteria and pus cells forming small abscesses. These abscesses were lenticular in shape, lying between the bundles of the connective tissue of the sclera. The inner layers were in general more extensively involved in the inflammation than the outer, but especially so toward the posterior portion of the globe. There were numerous small collections of pus cells lying just under the choroid coat. The inflammation also extended forward over the anterior portion of the eye, and there were collections of pus cells in the conjunctiva just external to the cornea. The cornea epithelium was, in general, fairly well preserved, but near the periphery there were a number of small abscesses elevating the epithelium. The iris and the ciliary body were practically normal, except for edema.

The lens showed no microscopical alterations. The choroid coat of the eye was extremely edematous, and in many places there was more or less abundant infiltration with small pus cells and fibrin, and in many of the smaller vessels there were fibrinous thrombi. All the capillaries were characterized by an extreme distention with blood. This edema with suppuration in the choroid was perhaps more marked in the anterior hemisphere of the bulb than in the posterior, while the subchoroidal abscess formation was more abundant in the posterior portion. The retina was in some places still attached to the choroid coat; in other places it had been separated, partly by shrinkage, partly by serous exudation. The retina itself was in some places edematous and the vessels choked with blood corpuscles. In other areas the preservation of the retina was fair, though everywhere the edema dominated the picture. The rods and cones had in some areas lost their normal structure and become indistinct, highly refractile fibrils. This was especially so where there had been a subretinal fibrinous exudation. In other portions the preservation was still fairly good. Cross sections of the nerve showed that practically all of the nerve fibres were destroyed. After staining with Wolter's modification of Weigert's method for medullary sheaths, a few fairly normal fibres could be demonstrated. The small nerves lying in the orbit showed perfectly normal structure, so that the degeneration was practically confined to the optic nerve. Only about 10 mm. of the optic nerve were removed, and in that no trace of central vessels with the exception of a few very small twigs could be demonstrated. The sheath of the nerve was not much inflamed, but the perineural fat tissue was, like the rest of the orbital fat, edematous, and full of pus, fibrin, and serous exudate. In this area there were thrombi in the sections of the external and internal ciliary arteries and in the veins which accompanied them, so that thrombosis of the central artery was probable, especially in view of the fact that many of the choroidal vessels showed thrombi. The arteries also showed a moderate degree of endarteritis.

REMARKS.

The gravity of chronic sinus trouble is pretty well emphasized by the sad outcome of this case. The patient, although he was cognizant of the fact that the nature of the trouble which existed within his nose was serious, was unwilling at first to have any attention paid to it, in spite of the earnest solicitation of his family physician. When I first saw the patient he presented the clinical picture of an acute exacerbation of a chronic ethmoiditis which in all probability had already begun to invade the orbit. This was suspected on account of the edema of the upper and lower lids, the pain on movement of the eyeball, the photophobia, and the evidence procured on examination of the fundus. The rapid course of the cellulitis was not unusual, as even in uncomplicated cases, when the orbit is once invaded, this occurs.

Whether the occurrence of this rapid form in this patient was precipitated or aggravated by the puncture of the antrum, or a mere coincidence, is a question which I believe cannot be so easily answered. Unfortunate occurrences after puncture of the antrum have been reported by Hajek, Schmidt, B. Frankel, Kummel and Kayser, and others. The case reported by Hajek was an acute empyema of the antrum, which after puncture and washing out was followed by immediate pain, and the next day with a chill and temperature of 104° F. The following days were attended by repeated chills and temperature, with a cellulitis of the cheek and metastatic condition in the wrist joint. The operation upon the antrum through the canine fossa offered an explanation for the occurrence. The needle, which naturally was infected in passing through the wall of the antrum and pus cavities, entered the submucosa of the posterior wall, caused a rapid infiltration, with increased pressure within the antrum, and a thrombopheblitis followed. In my own case the trocar was introduced into the inferior meatus, and, without the slightest difficulty or discomfort to the patient, entered the antrum. At once there was an escape of fluid, foul and ill smelling, showing that the needle lay in the antrum. The washing out was also easily accomplished. Later the operation upon the antrum showed it to be of unusually large size, so that only with an unusually large sized trocar or with unusual force would it have been possible to enter the posterior wall or even the orbit. The pus in the ethmoidal region gave streptococcus culture; that from the antrum was unidentified. The pus in the orbit also showed a streptococcus infection.

This might, therefore, speak for the source of the trouble as starting in the ethmoidal region. When the orbit was exenterated there was not the slightest evidence, on examination, of any defect in the bony walls or the orbital envelope. Within this envelope was an infiltrated mass with scattered minute abscesses and gangrenous spots. The whole picture presented one of thrombophlebitis with gangrene. I feel at a loss to explain the exact origin of the cellulitis. While I am strongly suspicious that the puncture precipitated or rather added to the malignancy of the attack, there are still sufficient facts to make one feel that the ethmoidal region might be held solely responsible. The rapid onset of the blindness may have been due to either of one or two causes; a retrobulbar neuritis due to the involvement of the posterior ethmoidal cells, which were extensively diseased in this case; or to the marked thrombophlebitis of the orbital veins, choking off the entire circulation of the eye as well as the orbit. This might result in complete necrosis of the nerve. I believe the latter to have been the case, as the entire nerve was found in a state of necrosis, as reported in the pathological examination. The fundus picture was interesting, showing an intense edema of the retina, with very dark and tortuous veins and a few scattered hemorrhages. A rather rare finding was the cholesteatomatous masses in the antrum. Oppikofer tells us that it is not as infrequent an occurrence as heretofore believed, to find a metaplasia of the cylindrical epithelium into pavement type when there is a diseased condition of the sinuses. This is brought about by the transformed epithelium of the nose creeping into the accessory sinuses. We know that for a desquamative inflammation there is necessary the presence of flat pavement cells in the diseased cavity. The products of such an inflammation lead to the formation of moist, onionlike layers of epidermis lamellæ. Through bacterial decomposition there arises a foul smelling mass, and through pressure the bone is eroded and the cavity enlarged. This is probably the explanation of the cholesteatoma and foul odor which we found present in the antrum of this patient. Such cases are few in number and have been reported by Hegetschweiler, von Ropke, and Heimendinger and Winckler.

I wish to add a few words more in regard to the therapeutic measures pursued in this case. After the radical exenteration of the entire ethmoidal region and the antrum, also after several incisions had been made into the orbit to relieve the local abscesses, no relief was obtained. It was felt that the life of the patient was in jeopardy unless something still more radical could be done. Such virulent forms of thrombophlebitis are as a rule fatal. The question was, should we stand by as observers, resigned to let one eye go, and then the other (a living death if the patient survived with his sight destroyed), or wait for the death of the patient, which, as Leber says, is the better ending. With the sight of one eye gone, the patient seriously ill, and threatened with the utterly hopeless complication of an endocranial involvement, we felt justified in making at least an attempt to stay the process by performing a complete exenteration of the orbit. Four days following this procedure we were congratulating ourselves in the belief that we had succeeded in halting the process. The temperature now began to rise and the patient rapidly grew worse, passed into a septichemic condition with meningeal involvement, and finally succumbed. The question of entering the cranial cavity and attacking the cavernous sinus, as advocated by Levinger, was considered. In the presence of such a virulent infection, and with the possibility of the almost certain destruction of the remaining eye, together with the low vitality of the patient, we did not feel justified in recommending any further operative procedure.

616 Madison Avenue.

THYROID MEDICATION IN CHILDREN.*

By Murray B. Gordon. M. D,
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Thyroid organotherapy is still in its infancy, but owing to our increasing etiological knowledge of retarded development, both physical and mental, it assumes an important position in our therapeutic armamentarium. Investigations in the past few years have proved its value from a sociological viewpoint as well as from a medical one. We are all familiar with the pictures presented in cases of myxedema and cretinism: The idiotic expression, the typical skin changes, the stunted growth, and impaired intellect; a symptom complex which has been classically accepted and proved to be due to absence or lack of thyroid secretion. Kocher, following Virchow in his investigations, proved that cretinism could be cured by artificial feeding of thyroid gland.

Recent experimentation has opened up a larger field; it has been shown that not only is thyroid gland or its extract efficacious in cretinism and myxedema, but also, which is more important sociologically and economically, in that type of cases termed by McCready (1) the "hypoplastic type" in which "there is marked deficiency in height and weight, persistent subnormal or variable temperature, delayed puberty, high arched palate, scaphoid scapulæ, delayed epiphyseal development as shown by x rays, enlarged tonsils and adenoid growths, dulled or erratic mentality with the various stigmata of degeneracy." A child of this type, while not an idiot or imbecile, will, if not treated, be a likely candidate for some city or charity institution, and thereby increase the cares of the already overburdened tax payers. Peabody (2) has found that seventy-seven per cent. of fifty insane patients that he examined showed changes in the thyroid gland. Noble (3) places the high arched palate as a sign of thyroid inefficiency instead of due to hypertrophied tonsils and adenoid growth produced by the "yielding of the palatine bones owing to their relative poverty in calcium salts, which in turn is due to an inadequacy of thyroid secretion."

These hypoplastic types run from one extreme to the other. There may be normal mental development with impaired physical growth and vice versa. One of my private cases, that of a boy three and one half years old, a precociously clever youngster, showed but just two signs of insufficient thyroid, an hypertrophied tongue and thickened speech. He has been fed on thyroid since eighteen months of age and his tongue is practically normal, though his enunciation is not quite perfect.

Dr. J. F. Crawford and I have had quite a number of these cases at the Polhemus Clinic, in children who are not cretins but who show some sign of degeneracy or backward development due to insufficient thyroid secretion. I shall cite just three cases as examples of the effects obtained with thyroid extract.

Case. (1336)—Louis S., twenty-one months old. Family history negative, the fourth child, no maternal history of miscarriage, full term child, natural delivery, weighing 8.5 pounds at birth. Breast fed up to three months, at present on beef juice, oat meal, whole milk, orange juice. Dentition, which was very severe, began at nine months; had never been able to sit up, crawl, walk, or even grasp articles. Could not talk, but seemed to understand when addressed. Profuse perspiration about head, strabismus for six months, bowels regular. Mother was informed at a New York hospital that baby was blind.

General appearance, that of a fairly well nourished child, gaping mouth, eyes staring, strabismus present. Upper set of teeth soft, had eighteen teeth, ten on lower, eight on upper jaw, one incisor being partly decayed and broken. Heart sounds regular, good quality, no murmur, pulse 118. Could not sit up, weak dorsal muscles, slight spasticity in mid dorsal region. Weight 19 lbs. 9 ozs. Unable to examine fundus of eye. No general rhachitic signs. Started on thyroid grain one half, twice daily, on December 9, 1910. The child became brighter, slept better, and lost its restlessness almost immediately. For the first month it lost four ounces in weight, but by April 10, 1911, it weighed 20 lbs. 6 oz.; it could sit up to some degree, could grasp articles and keep them in hand, and it displayed more intelligence, could follow objects with its eyes, showing that sight was present. By May 8th the weight was increased to 22 lbs. 2 oz. He was now getting two grains daily. Owing to severe teething, increased salivation, diarrhea, the thyroid was discontinued at different times, but it was noticed that the child became weaker then. We last saw the child, October 13, 1911, when the mother told us that she was moving out of the State. The child was a different being, it cooed and smiled, stretched out its hands at articles, and appeared vastly more intelligent than when it was first brought to the clinic. We had a good opportunity in this case to study the effects of prolonged medication, instances of which I shall mention later in the paper.

Case II (901). Mary H., two years old. Mother had been sterile for twelve years, then had had a miscarriage in two consecutive years previous to birth of this child who was a full term normal baby. Mother noticed signs of imbecibility at three months. Typical idiotic appearance, fontanelles closed, snuffles present. Thyroid started September 19, 1910. Mother last reported January 23, 1911; the child showed considerable improvement, but it seemed as if this was one of the cases where a maximum effect is obtained in a short time and then comes to a standstill. If this patient had been brought to the clinic as directed, and treatment continued, I think that we would have noticed a still greater improvement.

Case III (5357). Isadore L., fourteen months old, only child of father, who was thirty-eight years old, mother thirty, at time of marriage. Instrumental delivery at full term. Emaciated and of small stature at birth, weighing 3 lbs., could say "mamma" and "papa," could stand only with assistance. Weight 24.75 lbs. Started on one eighth grain thyroid extract, three times a day, April 19, 1911. By August 19, 1911, attempted to walk unaided. Larger vocabulary and very much brighter.

Demme (4) has reported a great frequency of goitres in the first year of life, fifty-three out of 643 cases being congenital; these children were nurslings and improved on thyroid medication given to the mothers. Kocher states that ninety per cent. of infantile cases can be cured by internal medication.

Siegert (5), of Cologne, has demonstrated as a sharp black line in radiograms, the transverse osseous lamella closing the diaphysis toward the epithelial nuclei, as found by Langhans and Dieterle in cases of congenital athyrosis; on thyroid treatment the radiogram showed that in a very short time nuclei were formed which normally require one, two, or more years for development. He believes that the radiogram provides the physician with a safe test by which to judge the progress of the case and the possibility of further development, further growth always being possible as long as the cartilages are unossified and the organotherapy is continued.

*Read before the Section in Pediatrics, Medical Society of the County of Kings, January 22, 1913.

Thyroid administration in Mongolian idiocy is not able to effect a permanent cure, as there seems to be in these cases no further development beyond a certain point. This is not really a thyroid disease, though thyroid deficiency may be associated with it.

Holmgren (6) found eighty-nine cases of exophthalmic goitre in children under fifteen years. In thirty-seven cases size was mentioned and twenty-five of these children were tall, showing that extra function on the part of the thyroid means greater skeletal growth and vice versa; this fact can be made use of in dwarfism by the administration of thyroid extract.

There have been several favorable reports upon the use of thyroid in rhachitis (7). No bad effects were observed under its administration; the children, who were abnormally backward in growth, rapidly increasing in size under the treatment, which generally was kept up from two to six weeks with intervals of two months.

It has been found efficient in enuresis, especially when long continued or occurring in backward children. I have used it for this purpose at the Polhemus Clinic in two cases with good results. Leonard Williams (8) reported a case in which adenoids and tonsils were removed as a possible cause of enuresis, but which became worse after the operation. Reasoning that the child's system was deprived of some internal secretion, he gave small doses of thyroid, with the result that the incontinence almost immediately ceased, and an increase in height and weight followed. He also reported twenty-five cases of enuresis in which he used thyroid with but one failure, and this case was found to be due to round worms. Everybody has not met with such good success, for out of twenty-eight cases of enuresis (unselected and consecutive) treated by Firth (9) in which adenoids were not removed, nor anthelmintics given, sixteen were cured or improved, while twelve were not benefited at all. Firth noticed that the cases reacting to this treatment were those in which enuresis existed from birth and in backward children. In my two cases both children were normal, but the enuresis was of long duration. The dose given was from one quarter to one half grain twice daily, being increased every fourteen days. Williams gives one half grain, twice daily, for a child from two to six years old, and two grains for a child from thirteen to fourteen years; for younger children he gives one quarter of a grain. He says that the condition should be relieved in one week, but if it does not respond to treatment he alternates the thyroid with calomel, grain one tenth, three times a day, for a month.

Midelton (10) believes that very few cases of long standing so called rheumatoid arthritis exist without some degree of thyroid failure; in these cases in which there is a soft swelling about the joints rather than bony overgrowth, thyroid treatment has proved efficacious, due perhaps to the iodine and arsenic contained in the thyroid. In this connection, I may also mention that cases of chorea and of rheumatism coexisting with exophthalmic goitre (11) in children have been found amenable to organotherapy.

J. R. Clemson (12) noticed enlarged thyroid in rheumatism in children, which he explains as a need for increased thyroid secretion in acute follicular tonsilitis; if thyroid is supplied artificially the danger of resulting hyperthyroidia is eliminated. Reasoning from this, thyroid extract should be of benefit in those cases of scarlet fever in which there is an increase in the size of the gland, as in the three cases reported by Bauer(13). Some analogous condition in the system may account for the slight general enlargement of thyroid which was found to be fairly common in some districts of London school children by Hitt (14), and carrying the analogy still further, thyroid treatment should be of some value here.

It has been known for a good many years that the extract is of great benefit in such skin conditions as sclerosis neonatorum, ichthyosis (15), psoriasis (16), scleroderma, and eczema. H. Stern (17) has reported it as successful in treatment of Riggs's disease.

To what is the action of thyroid extract due? In addition to its physiological action it acts through the iodine and arsenic it contains, there being an increased activity of the commercial thyroid when arsenic is added. There is six times as much arsenic in human as in sheep's thyroid. Small doses of thyroid combined with arsenic in certain proportions, according to H. Stern (18), would yield as good or better results as when given alone in the usual massive amounts. Added arsenic enhances and regulates the thyroglobulin, it does not make any difference what arsenic preparation is used. He uses arsenous acid and sodium cacodylate, the latter being a good cardiac stimulant. He has not noticed any bad effects from this combination. Other authorities, however, caution against use of thyroid in combination with other drugs.

Beebe, in a personal communication to the author, writes that in his opinion the success is due to improvement in the metabolic conditions of these individuals. He does not think that we are in a position to say what the precise mechanism of improvement is. It probably is not a matter of circulation and not solely a matter of action on the brain itself. It may be in part due to an action on the brain cells, but he is inclined to believe that the effect is likewise due to an improvement of the nutritional condition of the individual to such an extent that brain cells are not subjected to certain deleterious or toxic products that otherwise might affect them. This would explain its action in impaired mentality and in backward children. If we accept the theory that the thyroid gland furnishes a hormone (19), that would explain the action of the extract in the different conditions in which success has been reported.

Precautions are necessary in the administration of thyroid extract. Haskovec (20) has shown on experiments with dogs that there is a lowered blood pressure with an increase in frequency of pulse beat, the lowering of the blood pressure being the result of a direct weakening of heart action by vasodilatation. This can be obtained in some patients by continued medication, as I found to be the case with one of the children in the clinic who was under continuous treatment for almost two years for impaired intellect; every now and then he would have an oozing of blood from the throat and mouth, this ceasing on discontinuance of the thyroid.

The untoward effects may be mental, gastrointestinal, or cardiac, depending upon the patient's indi-

viduality. I have noticed a progressive diarrhea in some children following prolonged use, while in others increased salivation or increased perspiration was produced. Too large a dose or long continued treatment sometimes results in tachycardia, irritability of temper, and skin changes akin to those of myxedema. In some cases, the skin becomes irritable, as in one of my cases, in which an intertrigo was set up.

The dose depends upon the individual susceptibility of the child, age and body weight apparently having no relation with it. At the Polhemus Clinic we make it a rule to start with a small dose, one eighth grain twice a day, for ten days on and ten days off. As a preliminary we give calomel, grain one tenth, for ten doses, followed by castor oil. We gradually increase the dose of the thyroid up to two grains, and sometimes two and a half a day. Practically all our cases showed some improvement in a short time, this being manifested by increased weight and developed mentality. We do not combine it with any drug, discontinuing it temporarily if necessary and substituting other agents. Iodides, arsenic, salicylic acid, pilocarpine, and phosphorus will be found to be thyroid excitants, while the opposite effect is produced by opium, chloral, bromides, and calcium. Milk and a cereal diet have the latter effect. Thyroid fed children do not bear either chloroform or morphine well.

"He who runs may read." In the great field of modern prophylaxis where the up to date physician finds himself, thyroid medication, while not a panacea, assumes a preeminent position, especially in pediatrics.

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NEWER TEACHINGS OF DISEASES OF THE GASTROINTESTINAL CANAL.

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IX.

EXAMINATION OF DIGESTION.[1]

Diastatic digestion, the conversion of starch into sugar, is recognized in the ordinary way by means of Lugol's solution. The saccharification of the test meal I have not yet seen advance beyond the stage of the erythrodextrin. A weak solution of lugol, one to 250 of distilled water, is used.

Peptic digestion is recognized by the burette reaction, which is essentially Trommer's test for sugar, in which the reagents are used in a very dilute state. A small quantity of the chyme to be tested is put into a test tube to which is added first a little of a very weak solution of cupric sulphate and then a little of a very weak solution of caustic potash. A reddish violet color shows the presence of proteids.

It is assumed that pepsin is always present and the almost exclusive method hitherto, to demonstrate its presence, is by means of Mette's tubes. The operation involved in this process requires from fifteen to twenty hours, and, when we consider this time, we need not wonder why so few resort to this method. It has been my good fortune quite recently to discover a new reagent for the quick determination of the presence of the pepsin in the chyme. It came about this way. For certain reasons I used a weak solution of permanganate of potassium to wash the stomach of a patient. To my surprise the permanganate came back discolored. This happened repeatedly. The question at once came up, What discolors the permanganate? It could have been either the acid or the pepsin. I therefore made solutions of all the mineral and several organic acids, of a strength to correspond with the acidity of the stomach and used it on the permanganate, but no discoloration of the permanganate resulted. Rather, the permanganate assumed a deeper color. But when I took a solution of pepsin with hydrochloric acid the discoloration of the permanganate at once appeared. We know that urine discolors the permanganate, but urine contains pepsin, pepsin being eliminated by the kidneys. As one of my students intends to make a thorough study of this question, I refrain from making any further remarks and simply wish to bring to the attention of the medical profession that in the permanganate of potassium we have an excellent indicator for the presence of pepsin, and the operation requires but a few seconds. I hope that this method will soon supersede the Mette method, which I will now give.

Mette's method consists in allowing small, capillary glass tubes, filled with coagulated albumin, to be digested by the chyme. We then read off at each end of the tube the number of millimetres digested by the chyme. Of course, in the absence of pepsin or acid, there will be no digestion of the albumin.

The capillary tubes are of from one to two millimetres in diameter and thin walled. Before using them, they must be cleaned by putting them in boiling water and then washing in alcohol. After they are dried, fresh albumin is drawn into the tubes which filled are thrown into water of about 90° to 95° C., in which they remain for fifteen minutes. The tubes are then removed, dried, and the ends are closed by winding a very thin piece of absorbent cotton around them, after which the ends are dipped in molten paraffin. The latter procedure is for the purpose of excluding the air and to preserve the tubes, so that the tubes can be prepared in quantities for future use.

To determine the presence and action of the pep-

[1] See JOURNAL, March 29, 1913, p. 654.

sin, a piece, about an inch and a half long, of the prepared Mette's tube is cut off with a file, and the ragged end filed straight and smooth. This piece of tube is then put into a Petri dish of ten c. c. capacity, the dish filled with the filtered chyme, and covered to prevent evaporation. For such determinations the acidity of the chyme must be brought up to a standard. The best would be to accept a certain acidity of free hydrochloric acid as standard. After we have determined the actual acidity (free hydrochloric acid), we bring the acidity of the chyme up to such standard by either adding the decinormal sodium hydrate, if there is too much free hydrochloric acid, or we add the decinormal hydrochloric acid up to the point of the accepted standard. The Petri dish, provided with chyme and the capillary tube, is covered and put into an incubator, the temperature of which must be kept between 37° and 38° C. for from twelve to twenty hours. This time may be varied to suit the wish of the experimenter, but the same length of time must be observed in all comparative experiments. The Petri dish is then removed from the incubator, the capillary tube is dried, and the column of the digested albumin is read off in millimetres. Normally about five millimetres of albumin are digested.

To detect the milk coagulating rennin, from five to ten c. c. of the filtered chyme are carefully neutralized and mixed with ten c. c. of neutrally reacting milk, which is then put into an incubator and kept there at a temperature of 37° to 38° C. for about half or one hour. The coagulated milk, after removal from the incubator, proves the presence of rennin or its zymogen.

The test meal examination also yields to the test for alcohol; it would seem that alcohol is present in every test meal. This need not surprise us; the starch being converted to sugar and the sugar into alcohol. The alcohol is recognized by the iodoform test. Some filtered chyme is warmed up in a test tube with some caustic potash, then some little sublimed iodine is added and heated again, when the iodoform which forms, precipitates and the smell of iodoform is given off.

The Uffelman test for lactic acid. As this test is quite general, I wish to make a few remarks about it. This test, if properly executed, is certainly correct. But the misfortune is that it is open to a great deal of misinterpretation, and I have seen it misinterpreted even by one who held the position of director of the laboratory of a very large hospital. To a very thin solution of ferric chloride, in a narrow test tube, is added a little carbolic acid. The solution turns an amethyst blue color. Into the test tube is added the suspected chyme. In the presence of lactic acid the amethyst blue color turns a canary yellow. The ordinary test meal itself gives a sort of yellowish color to the amethyst blue color, and, therefore, unless one is thoroughly familiar with the reaction, he may mistake this yellowish color for the canary yellow. One can readily understand the importance of such a mistake if cancer is diagnosticated which does not exist. This was just what happened with that laboratory director. Once, on visiting this physician at his hospital laboratory, I found him making the Uffelman test and then make the diagnosis of cancer because of the yellow discoloration of the amethyst colored iron solution. But the yellow was not the canary yellow. On further discussion he confided to me that there were several cancer cases in the hospital. Very much interested in the discussion, I asked for the progress of such cancer cases, and the answer was that they were getting along quite well. I then called his attention to my floating test for lactic acid, and we then proceeded to apply the floating test to the chyme which he was then analyzing. The chyme did not respond to the floating test; there was no lactic acid in that chyme. No wonder his supposed cancer cases got along well, they were not cancer.

The fact that occasionally we get some patients who refuse to take the stomach tube has caused some investigators to devise a substitute. If the medical profession in general were to recognize that there is absolutely no contraindication to the introduction of the stomach tube, and that a test meal examination is absolutely essential—if our diagnoses are not to be based upon mere guesswork—there will soon be no objecting patient. Methods have been devised to test the motility of the stomach and the very gastric secretions by having the patients swallow some chemicals or minute appliances. My general criticism is derogatory to the employment of any such means; they prove nothing and are a nuisance, leading to fatal mistakes. The question of motility of the stomach is still confusing the minds of the profession. It is unfortunately still held by a good many that a prolonged sojourn of chyme within the stomach indicates atony of the stomach—a lessened motility, while a rapid emptying of the stomach evidences an increased motility of the stomach. Ewald devised the salol method for testing the motility of the stomach, in accordance with which the urine is tested for salicylic acid from half to three quarters of an hour after the taking of the salol. Many authorities have proved this test to be unreliable. The employment of the iodide of potassium for a similar purpose has likewise been abandoned.

A few years ago Sahli, of Berne, devised a quite ingenious method, "the desmoid reaction," the object of which is to determine the presence of free hydrochloric acid and the motility of the stomach. This method rests on the assumption that connective tissue and also catgut are digested only by hydrochloric acid. A small quantity, or a small pill of methylene blue, is enclosed in a small rubber bag and tied with catgut. This is swallowed by the patient. Normally the hydrochloric acid digests the catgut, which frees the methylene blue, which is excreted by the kidneys, giving the urine a blue color. This is to happen, normally, within six to seven hours after the swallowing of the rubber bag. Always ready to improve, Einhorn worked out his glass bead novelty, glass bead, and catgut. if the catgut is digested, then there was hydrochloric acid. And if there is no digestion of the catgut (which is recognizable according to Sahli by the failure of the urine to be colored blue or greenish blue, and according to Einhorn by the glass beads coming out through the rectum with the catgut attached to it), then the absence of hydrochloric acid or overmotility is diagnosticated. Neither of these methods

takes cognizance of the presence of the condition of a relaxed pylorus, of insufficientia pylori. In insufficientia pylori the desmoid bag of Sahli and Einhorn's toy beads will get beyond the pylorus, although there may be sufficient hydrochloric acid. And a too rapid disappearance of chyme or other matter from the stomach I have already proved not to indicate excessive motility, but rather a relaxed pylorus. Also, various devices have been recommended to circumvent the necessity for introducing the tube for the purpose of ascertaining the presence of hydrochloric acid. Some advocate the patient's taking some sodium bicarbonate, which in the presence of hydrochloric acid will be decomposed, giving off carbon dioxide, which would give a hissing sound which could be heard. I confess I have not tried this simple method. But the objection to it is that, at best, it would tell simply the presence of an acid. And, as the acid in the stomach is always in solution, not only the free hydrochloric acid, but organic acids, and acids in combination would react as well with the soda, leaving us to guess what acid it is. Einhorn devised a silver bucket, a small affair suspended from a silk cord for the purpose of getting up some gastric contents. The patient swallows the bucket and, at the opportune moment, the bucket is hauled out of the stomach, filled with contents, which contents can then be examined. A most beautiful illusion. A bucket is sent down a well and is drawn up with water. There are no constrictions or tortuosities to impede either the bucket descending into the well, or its ascending out of the well; the oaken bucket has free elbow room all around. A reference to the anatomy, however, shows that Einhorn's bucket is not so favored; Einhorn's bucket has no free elbow room. Besides, there are plenty of tortuosities and folds and constrictions which conduce to a great many complexities. If by mere accident the bucket had filled itself just where Einhorn wishes, it is subjected to many somersaults before it reaches, head up, the cardiac opening; peristalsis is apt to play havoc with that dangerous toy. The danger arises from the fact that the bucket is not so obliging as to shoot itself out, but it has to be pulled. Were the bucket suspended from some rubber tubing, there would be no danger of lacerating the mucous membrane. But, as it is suspended from a thin silk cord, which is to be pulled along tortuosities, the cutting of the mucous membrane is a foregone conclusion. Thus it will be seen that in case the bucket brings up some contents we might examine them; but if it fail to bring up contents, we are not sure that the bucket did not spill out its contents. Under the most favorable conditions the quantity is too small, so says Einhorn himself, for effective examinations. The bucket should be condemned, according to Einhorn's own experiences. Einhorn tells us of ulcers of the stomach and of the duodenum which he demonstrates by means of the silk cord of the bucket. In my article which deals with this subject (The Fallacies of Einhorn's Duodenal Alimentation and Duodenal Bucket, *St. Louis Medical Review*, November, 1910), I believe I have proved that the said ulcers are the violent artifacts of the employment of the bucket.

The microscopical examination of the chyme. The normal chyme shows little more than the digested starch cells. The configurations of the starch cells vary with the kind of grain. The starch cells are easily recognized by the concentric rings. Beside the starch cells, single yeast cells are seen. The yeast cells are, as a rule, of an oval shape; they may, however, also appear perfectly circular. The concentric markings of the starch cells are very clear, perfectly defined. In the starch cells are seen bluish green and pink markings resembling rivers and lakes. Where the conversion of the starch, the diastatic digestion, is perfect, the bluish green markings preponderate; where the peptic digestion is relatively greater, the pink markings preponderate. In pyloritis, when there is an abundance of mucus, no concentric marking of the starch cells is seen, but instead, the cell appears swollen and cloudy. Under pathological conditions the chyme contains moulds, yeasts, bacilli, cocci, blood, etc. The picture varies with the variety of the fungus; also the different parts of the fungus look differently and, therefore, give different pictures under the microscope. This will be understood from the fact that moulds are plants and, as such, consist of various parts. Patches of irregular shape and form, clusters of spores or mycelium are mistaken for detritus. Single asci are mistaken for nuclei. Young mould filaments contain no granules, but consist only of a wall membrane and are segmented at regular intervals. A single segment, detached, looks like a crystal. Some authors speak of the presence of crystals in the chyme; unquestionably they misinterpreted the true facts. Spores crowded together are mistaken for cocci. Until I had studied the growth and the development of several mould varieties in pure cultures, I made the same mistakes. Spores are often so thickly set that nothing definite can be made out. They look like shapeless, formless, and structureless blotches; very often even their color defies description. Some cylindrical sections are very thin, with or without granules; others are wide. Such cylindrical sections may show longitudinal or cross or oblique markings and are usually of a light green color. Very often such so called bacilli are, either only, or best seen after staining and decolorizing. For staining I use a solution of fuchsine (fifty mg. to seventy-five c. c. distilled water). After staining, the specimen is decolorized with the decinormal solution of caustic soda. In some cases the bacteria (?) appear only after the decolorization.

For the purpose of microscopical examination the thin part of the chyme is used. For that reason the chyme is poured out from the beaker into which it was first put, into another beaker. A drop or two collect on the bottom of the first beaker, after the chyme has been poured out. The beaker is inclined and into the drop or two which has collected, a pipette is immersed and, by capillary attraction, some of the fluid gets up into the pipette. A drop of the fluid, which is now in the pipette, is put upon a glass slide and covered with a coverglass. In order to strain the specimen, a drop of the fuchsine solution is placed near the edge of the coverglass. Soon the fuchsine reaches the margin of the coverglass, and then gradually the specimen is stained.

The entire process of staining can be watched under the microscope. Then the specimen is decolorized with a drop or two of the soda solution. the soda solution, likewise, being placed near the edge of the coverglass. Any excess of either stain or soda can be carefully removed with blotting paper. The soda solution decolorizes, as a rule, everything but moulds and yeasts.

Under pathological conditions yeasts are found in a budding, growing, sporulating state. The yeasts are seen as mother and daughter cells and in chains. A few isolated specimens cannot be looked upon as pathological. But, when they are found in great quantities, they indicate a pathological condition. Abundant yeast growth is usually accompanied by a great number of bacilli of various shapes and sizes, and the presence of these does not negative the presence of free hydrochloric acid. Into the yeast group belong also the sarcinæ, yeast cells grouped in the shape of bales of cotton.

Blood is another of the abnormal constituents of the chyme, which can be recognized under the microscope, by the naked eye, and by chemical means. The peculiar coffee ground appearance of the gastric contents is characteristic of a hemorrhage, the blood having been acted on by the gastric juice. Chemically it is detected by several tests. To some gastric contents in a test tube is added a little freshly made tincture of guaiac (this is made by dissolving a little resin of guaiac in alcohol); then some old turpentine is added and the test tube is shaken up; a blue color shows the presence of blood.

Weber's test. Dilute the stomach contents with one third volume of glacial acetic acid and extract with about ten c. c. of ether. A few c. c. of the ether extract are mixed with ten drops of the tincture of guaiac and twenty to thirty drops of old oil of turpentine. The mixture turns blue in the presence of blood.

Quite recently arose the question of the presence of occult blood in the chyme, and various chemical tests have been devised for the purpose of detecting such occult blood. I have never interested myself in this. Either there is present a hemorrhage or there is not. Ordinary hemorrhages are easily recognized, whether recovered from the mouth or rectum. If we are to look for occult blood, we might as well ignore it altogether. No conclusions should be drawn from the presence of occult blood, even if we had an absolutely true means of detecting it, and we do not have that.

Bile may be found in the gastric juice. I have seen it only very rarely, and then occurring in insufficientia pylori. The bilious gastric contents are of a dark olive green color and viscid; a bright green, a grass green color is due to mould. However, the diagnosis of bile should never be made by guesswork, but by actual chemical tests.

The presence of inflammable gases in the stomach has been mentioned by some. I have had one such case in my practice. Exhaling upon a lighted cigar, the exhaled air flamed up and burned the patient's moustache.

Some more or less elaborate tests have been devised for the detection of cancer, but as yet no reliance can be placed upon any.

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ELECTRICITY IN RECTAL DISEASES.

A Neglected Resource in Their Treatment.

By Frederick H. Williams, M. D.,
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Bodenhamer declared: "There is no disease in the whole range of medical literature which has a more ancient history than hemorrhoids." A thousand years before the Greek era diseases of the rectum were spoken of as a scourge and a blight upon the human race. Bible records are replete with references of this kind. Moses speaks, in Deuteronomy, of *emerods* as a curse for disobedience. A similar reference in I Samuel speaks of this affliction as a punishment for sins. Rectal diseases are as prevalent as they are old. So frequently have they been observed at all times, in both sexes, among all races, in the robust and the infirm, that one need not apologize for reviewing an old subject, even though his contribution may be but a step in the direction of relief to suffering humanity.

I shall focus your attention, if I may, upon a neglected resource in the treatment of the commonest of all rectal diseases, i. e., varicose internal hemorrhoids. Before proceeding to speak of the advantages of electricity over some other methods of treatment, it may be profitable to review briefly the strong and weak points of the many operations in vogue.

Since Sir Henry Smith introduced the actual cautery in 1861 as a treatment for hemorrhoids, the cautery, or more recently the clamp and cautery, has enjoyed much popularity. Many surgeons believe it to be the simplest and best of the several operations in use to-day. The advantage of a comparatively short convalescence of one to two weeks, and its usual freedom from the dangers of infection, are urged in its favor. The significant fact remains, however, that Whitehead abandoned the method, Allingham objected to it, and Matthews showed his preference for the ligature operation, believing it to be less painful, less subject to the dangers of hemorrhage, and less apt to cause stricture.

The ligature operation has been practised for hundreds of years and has had the approval of the majority of physicians from the time of Galen to the present day. Among the most staunch supporters of this operation have been Cooper, Burke, Bodenhamer, Allingham, and Matthews, who have found it simple and applicable to almost every variety of hemorrhoid. The objections to the ligature operation are that convalescence is protracted; according to enthusiasts, the patient must expect to be confined to his room from two to three weeks. Ulceration and fistula are not uncommon complications, and almost all fatal results after operations for hemorrhoids have been due to tetanus following the ligature method of treatment.

Of the Whitehead operation, or excision, it may be said that few surgeons in this country are able to report such good results as Whitehead. The commonest sequelæ following the Whitehead operation are stricture, fissure, and exstrophy of the mucous membrane. These facts render this operation unlikely to become popular in ordinary rectal practice.

Occasionally dilatation under a general anesthetic meets all the requirements of mild cases, but when the hemorrhoids protrude, or when there is too much relaxation, as observed in aged subjects, dilatation is a fruitless and contraindicated measure. Of the other methods used, little need be said except that the law of survival of the fittest has consigned them to oblivion.

In spite of the remarkable progress in general surgery, there is plenty of evidence, from the standpoint of the observing practitioner, as well as that of the patient, that the surgical treatment of diseases of the rectum is far from perfect. Pennington (*American Journal of Surgery*, October, 1907) quotes Tuttle as saying: "A very large percentage, if not a majority of the cases of fistula operated in in hospitals and treated by general surgeons, are failures so far as cure is concerned"; adding, "Less than forty-five per cent. out of 2,196 cases collected are even claimed to have been cured." Since fistula is a common complication of and sequel to the various operations for hemorrhoids, these figures command our careful consideration. What is the remedy for this unsatisfactory record in the handling of rectal diseases? The solution of the problem seems to me to rest with the medical colleges. Let them acknowledge proctology as a separate course and require a definite number of hours' attendance, thus enabling the general practitioner to become better informed concerning a common class of diseases which are now scarcely mentioned in medical college courses. This innovation would create an incentive to develop new proctological resources without as well as within the domain of surgery.

It should not be inferred from the title of this paper that I believe electrotherapy has been neglected except in so far as it applies to proctology. Electrolysis is recognized as a powerful force to conjure with in scientific undertakings, and if properly controlled it is a most trustworthy expedient therapeutically. Although electrolysis has long been known, having been used by Gustav Crussel and Herr Schoenbein in the treatment of tumors as early as 1840, it was neglected for many years because of the brilliant achievements of antiseptic surgery. Without doubt Crussel, Schoenbein, Middledorf, and other early experimenters, expected electrolysis would be adopted as a most valuable adjunct to surgery, but such rapid advances were made in the field of surgery that electrolysis seemed unnecessary and was therefore neglected instead of becoming the natural substitute in cases where surgery was found to be unnecessary or contraindicated.

Newman (*Journal of the American Medical Association*, p. 701, 1891) averred that he had used the electrolytic current for stricture of the rectum as early as 1871. Briefly described, his technic was as follows: With his patient in the Sims position, he placed an insulated, olive pointed, negative electrode in contact with the stricture, applying the positive electrode to the abdomen or palm of the hand. He then allowed a current of five to twenty milliampères to flow from fifteen to twenty minutes. This current served to dissolve the stricture, and allow the electrode to pass. He treated his patients at intervals of two weeks and reported many cures. Le Fort (*Gazette des hôpitaux*, 1873) employed electrolysis to destroy strictures in much the same manner, except that he used a milder current and his technic was more crude. He allowed the electrode to remain in contact with the stricture for a longer time, occasionally leaving it in place over night. Nevertheless he reported good results. Beard (*Archives of Electricity and Neurology*, i, p. 98) used a similar method in 1874, calling his method a "galvanic chemical absorption." To Neftel (*Virchow's Archiv*, lvii, lxx, lxxxvi) belongs the greatest credit for placing electrolysis upon a scientific basis as a therapeutical agent. His experiments with benign and malignant tumors, including a record of examinations made ten or twenty years after treatment, are very convincing. Although many investigators will doubt the logic of Neftel's conclusions in regard to the cure of malignant neoplasms, he and his confrères were men of great ability, and it is only fair to accord his research work full credit.

Dubois-Havenith and Maes, in a communication to the Société médico-chirurgicale du Brabant, March 24, 1912, describe an ingenious technic for the removal of sebaceous cysts by electrolysis. It will be obvious to all that this neglected force is more specifically indicated in the treatment of diseases of the mucous surfaces than upon the skin, for it often disfigures the latter, while no such objection arises when used upon the mucous membrane. In fact, a firm cicatrix is especially desirable in these cases. Then, again, electrolytic treatment in diseases of the mucous passages, such as internal hemorrhoids, polypi, adenomata, etc., is less than half as painful as treatment upon the skin. Sir Charles Ball was one of the later investigators to recommend the use of electrolysis for internal hemorrhoids. Ball's technic was surprisingly simple. After bringing the hemorrhoid into view, it was painted with a four per cent. solution of cocaine. In five or ten minutes the parts were insensible to pain, and four or five sewing needles, attached to the negative electrode, were passed into the tumor and allowed to remain until the tissue turned white. This procedure was found quite painless, the patient was not confined, and there was entire absence of ulceration or other complications. After employing electrolysis in the treatment of internal hemorrhoids for over ten years, and observing its many advantages over surgical measures, I am led to wonder why the recommendations of Ball in this regard were not heeded long ago, and the method acknowledged to be the preferred treatment for uncomplicated cases.

The technic I employ may be successfully carried out in the office, and differs somewhat from that of Ball in permitting more exact control of the electrode, making thorough illumination possible and rendering accidental shortcircuiting through the speculum unnecessary. Pain is almost entirely eliminated, and a single application of the current effects a cure in ordinary cases. The patient needs very little preparation before treatment. A cathartic twelve hours, and an enema one hour before coming to the office prevent any interruption or delay during treatment. After the usual antiseptic cleans-

ing, the patient is placed in the Sims position, a short proctoscope is passed, and the hemorrhoid is brought into view. Unless the sphincters are contracted, it is not necessary to dilate them. I prefer a three inch beveled proctoscope, which is easy to insert and satisfactory to operate through. If the tissue to be treated is confined to one side, a Hirschman oblique anoscope is useful. With these instruments it is possible to retain the hemorrhoids in view as long as necessary to carry out this plan of treatment without tiring the patient.

The choice of the syringe and the local anesthetic is an important consideration. Any one of the many anesthetics, such as cocaine hydrochloride and beta eucaine hydrochloride or lactate, may be used, but the percentage strength should be very low, because, first, the solution does not ooze away as in cutting operations; second, a larger quantity of fluid is necessary to get pressure anesthesia than when injecting the skin. This is due to the greater elasticity of mucous membrane and to the absorbent capacity of the loose cellular tissue about the rectum. Solutions of one tenth of one per cent. to one half of one per cent. are sufficiently concentrated to obtain perfect anesthesia. Beta eucaine lactate has the advantage of remaining stable upon being boiled and is reputed to be less toxic than cocaine. The syringe of choice is an all metal, three ring syringe of two drachm capacity, with a curved extension piece and a very small needle, to facilitate thorough infiltration without causing pain. The hypodermic injection should be made from the base to the apex of the hemorrhoid. When the tissue is distended and has a blanched appearance, the tumor is ready for treatment.

The stock electrodes upon the market are a disappointment to those who hope to do superior electrolytic work. They are coarse and awkward to handle, and often obscure the proctoscopic view completely. I have had made for my special needs, ten inch, monopolar, platinum electrodes, having three points arranged in a row. These slender electrodes permit good illumination; they do not interfere with vision, but facilitate carrying out the smallest details of this method of treatment. When the pile tumor has been injected and is no longer sensitive, the electrode should be passed into its centre, and its position changed from time to time until disintegration is complete. It should be remembered never to interrupt or make contact during a treatment, without first turning the rheostat to zero. A current of five to tweny milliampères, slowly turned on and continued for five or ten minutes, is usually sufficient to treat a single hemorrhoid. The exact time required will depend upon the size of the pile tumor, the strength of the current, also the resistance in circuit. As soon as the current is turned on, bubbles of gas form in the shrinking tumor, giving it a grayish white color. The resulting chemical effect is that of dissolving albuminous constituents, causing electrolytic decomposition of the salts contained in the tissues, and inducing molecular disintegration. If this technic is followed closely, it will not be necessary to repeat the application, although further treatment is not contraindicated where the first application proves insufficient. Antiseptic precautions are not to be forgotten, although this is not so necessary, as the electric current itself has an antiseptic and bactericidal effect. The absence of pain and other disagreeable manifestations following these treatments causes me to join with Neftel, who says of his experiments: "The first thing that surprised every surgeon who attended the electrolytic treatments was the slight general and local reaction following the operation." A few illustrative cases will indicate the safety and ease with which this method of treatment can be employed in office practice.

Case I (prolapsing internal hemorrhoids treated in office). Doctor D., sixty-two years of age, complained of having had hemorrhoids for twenty years. He did not wish to spend the time to go to a hospital, although it was his customary advice to others. Upon examination I found two large, protruding, sensitive internal hemorrhoids. A day of preparation was advised, during which the bowels were moved and a light diet was allowed. On the second day I treated both hemorrhoids with a mild current of ten milliampères. The treatment being completed in less than twenty minutes. No pain was complained of, the patient continuing about his duties as usual, which included making several calls. I saw Doctor D. every second day for a week and discharged him as cured. Sixteen months afterward I made an examination and found a normal rectum.

Case II (bleeding hemorrhoids with anemia). Mrs. M., aged fifty-four years, the wife of a prominent merchant, was referred to me with a history of frequent and profuse hemorrhages from the rectum, which for many months had kept her in a condition of exhaustion. She had been treated for nervous prostration and anemia, but had never had a rectal examination. Upon passing a speculum, three large hemorrhoids presented, one of which was bleeding freely. This I was told was almost a daily occurrence. As the patient had been taking the rest cure and was on a careful diet, I saw no advantage in delaying treatment and advised immediate electrolytic treatment, which was given an hour after the examination. The largest hemorrhoid was given a current of twelve milliampères for ten minutes. The patient experienced no pain, but a slight sensation of heat which quickly passed away. She said she felt better after the treatment and was permitted to be about her usual duties, which caused her no inconvenience. Ten days later the two remaining hemorrhoids were given a treatment lasting about twenty minutes, which completely obliterated the pile tumors. Defecations were only slightly more irritating than usual for two or three days. In one month Mrs. M. had gained much weight and strength and continued to enjoy perfect health until three years afterward, when I last saw her.

Case III (hemorrhoids complicated by painful ulcer). Mr. R., banker, aged forty-three years, came to me complaining of painful bowel movements and intense itching about the anus. He said he had been operated upon twice for piles, within two years. He complained of being unable to sleep and felt that his condition was gradually getting worse. Examination revealed two eroded hemorrhoids and a small painful ulcer, apparently of recent origin. The patient was prepared for treatment by being placed upon a soft diet, having the bowels thoroughly emptied and irrigated with a three per cent. solution of boric acid. With the patient in the left lateral position, a bivalve speculum was introduced in such manner as to expose the hemorrhoids and the ulcer. The hemorrhoids were anesthetized as well as the small fissure. The electrolytic current was applied for twenty minutes, and the painful ulcer painted with a six per cent. silver nitrate solution. No further treatment was needed for the hemorrhoids, but the fissure was treated every second day for two weeks, when the patient was discharged. At various times during the succeeding five years Mr. R. took occasion to inform me that he considered himself perfectly well.

CONCLUSIONS.

In conclusion, I wish to summarize briefly the results of my investigation and experience with the electrolytic current as follows:

Electrolysis is a safe and painless method of treating all cases of varicose internal hemorrhoids.

Patients are not confined to the room, or detained from their usual duties while under treatment, except in extreme cases.

Weak and aged patients who are unable to take a general anesthetic stand electrolytic treatments admirably.

Electrolytic treatments are not so easily given as electrocautery treatments, the former requiring more time and more exactness of technic.

There is no hemorrhage during or after treatment.

Ulceration, stricture, fistulæ, or abscesses have never been observed as a sequel to this method.

Records covering a period of ten years after treatment indicate that cures are permanent.

19 Arlington Street.

TREATMENT OF TUBERCULOUS BONE ABSCESSES AND SINUSES WITH TUBERCULIN.*

By W. Saulsbury Niblett, M. D.,
Baltimore.

Since the recognition of tuberculous abscesses and sinuses the evolution of the treatment has been more or less in a chaotic state and is far from satisfactory. Many methods have been suggested and tried, but the attempt to go into this subject very deeply is confusing and almost hopeless as to the enumeration of the various methods of treatment; therefore, the object of this paper is in the nature of a small contribution of our experience at the Kernan Hospital for Crippled Children, and while we all agree that the observation is as yet meagre, we shall give the methods of treatment that have come under our own observation.

Among the various forms of treatment may be mentioned the following: Evacuation of the abscess and immediate closure: evacuation and drainage; evacuation and injection of iodoform glycerin; evacuation and swabbing out with carbolic acid, followed by alcohol; washing out with hydrogen peroxide, or forty per cent. formaldehyde solution, iodoform ether, zinc chloride solution, tincture of iodine; evacuation and injection of Beck's bismuth paste, or injection of chalk powder and petrolatum; vaccines in mixed infections; and, finally, we have used tuberculin, used both locally and systemically; the new tuberculin used systemically and the old tuberculin used in abscesses or sinuses.

One will readily conclude from all of the first named numerous methods mentioned above that the use of any one of these has not proved entirely satisfactory in the hands of orthopedists in all cases. We have used all the foregoing methods, but have found by experience that better results are obtained by the local tuberculin treatment. We must bear in mind that Nature is engaged in a general as well as a local germicidal warfare, and well directed assistance in building up the general condition of the patient will enable her to conquer. Remember to treat, first of all, the primary focus by the best means possible, and that the treatment of the abscess is secondary; therefore, not only orthopedic, but all hygienic measures must be enforced, such as sufficient sleep, fresh air, sunlight, good, nourishing food, proper clothing, etc. All these are most important adjuvants, but too much stress cannot be laid upon the importance of good food, fresh air, and sunlight, as these are the most important agents required, not only in phthisis, but in bone tuberculosis.

Other measures should be employed to improve the general condition, such as tonics and alteratives, which must be selected according to each individual case. We have had good results from using olive oil, strychnine, tincture of nux vomica, potassium iodide, tincture of ferric chloride, and syrup of the iodide of iron.

As to local treatment, we have found that the existence of a tuberculous abscess does not necessitate immediate evacuation, so we find that the expectant treatment, combined with thorough mechanical treatment, often yields good results. If the abscess is very large and deeply placed, there being no pressure symptoms, we have found that if the part is put at rest by traction and fixation and the patient allowed plenty of fresh air, sunlight, and good food, the contents of the abscess will become absorbed and the gaseous material will become encapsulated. Therefore, we religiously discourage immediate evacuation of the abscess unless it has signs of secondary infection, because an abscess that is opened is not only most prone to secondary infection by pyogenic cocci from the skin and hair follicles if left open for twenty-four hours, but may cause a dissemination of tubercle bacilli by way of the blood or lymph, setting up miliary tuberculosis or meningitis, or it may cause the formation of a sinus which not only will probably discharge as long as the disease is active, but is "the gateway by which death so often enters."

In cases in which the patient has a great deal of pain, due to pressure on nerves, bloodvessels, or bowel, or interference with digestive or respiratory functions, we advocate incision, evacuation of the abscess, and immediate closure. Under no circumstances do we allow an abscess to be left alone when the skin is becoming reddened from tuberculous infiltration, because it will ultimately break down and most likely become secondarily infected.

All abscesses secondarily infected should be opened at once, swabbed out with carbolic acid, followed by alcohol, which will destroy the remaining tubercle germs and the secondary infection. In some convalescent cases of bone tuberculosis, where the focus is circumscribed and easily accessible—for example, in the condyles of the femur—erasion may be done, always with the use of an Esmarch bandage and a tourniquet. The cavity is swabbed out with tincture of iodine and filled with the following mixture: Yellow wax, one part; wool fat, five parts; bismuth subnitrate, fifteen grains to an ounce of the mixture, after which the incision is closed. We believe this procedure has saved many joints from infection by direct extension. This does not, obviously, apply to tuberculous foci within the joint or vertebræ.

*Read before the Baltimore County Medical Society, May 15, 1912, and Interurban Orthopædic Club, November 19, 1912.

There are certain cases, however, that refuse to heal under any local treatment, and ultimately result in the formation of an obstinate sinus. Here we have a rather difficult condition to treat, but we have had some success by the use of Beck's bismuth paste or by the use of a chalk mixture; but in the use of the former one has to be somewhat cautious to guard against bismuth poisoning, although we have had only one such case. As some patients seem to have a marked idiosyncrasy for the substance, we prefer using the chalk mixture. We have also used scarlet red and petrolatum (ten per cent. ointment) with some success.

I wish to go on record for the following method, which was suggested by Doctor Taylor and carried out with modifications by the writer in Doctor Taylor's service, and which so far as we have been able to determine is original. We have been systematically using old tuberculin locally with good results since August, 1911. It is very stimulating to the sluggish granulations and converts the creamy pus into serosanguineous pus. After two or three injections the sinuses appear healthier and the discharge is markedly decreased.

The technic is very simple and consists of the injection of about 120 minims of one to 500 old tuberculin solution into the depths of the sinus by means of a syringe or a small, soft rubber catheter, which is withdrawn as the injection is made, in the endeavor to bring the tuberculin into immediate contact with the walls of the sinus.

After three or four injections the strength of the tuberculin is increased from one to 500 to one to 250, or even one to fifty. This is governed by the reaction, both local and systemic. The injections are given biweekly. There is some systemic as well as local reaction after the first injection. The patient's temperature may reach 101° or 101.5° F., with some lassitude, but this is less marked after the first two or three injections, and usually disappears entirely after subsequent treatments. Great care must be taken to use weak tuberculin solution, as it is desirable to avoid a rise of temperature.

Our feeling in the matter is that the sooner we get the sinus closed or thoroughly plugged, aside from the treatment of the granulations with the tuberculin or some other substance to stimulate the walls of the abscess or sinus, the better it is for the patient.

The following are a few of the typical cases in which the tuberculin application to the sinuses was employed from the wards of the Kernan Hospital for Crippled Children:

Case I. W. K., male, aged twenty years. Tuberculous knee, duration eight years. Sinuses, four; September 2, 1912, these were discharging a great amount of creamy pus, when 150 minims of the old tuberculin (one to 500) was injected. The injections were given twice a week, gradually increasing the strength. After using the tuberculin for three or four injections the creamy pus was changed to serosanguineous pus and very much reduced in amount. November 15, 1912, the sinuses were about healed and had scarcely any discharge.

Case II. F. C., male, aged nineteen years. Neglected case of coxalgia of right leg, dating from 1905. He had seven sinuses in a boggy thigh, groin, and hip. The pus was extreme in amount, requiring dressing twice a day. Tuberculin was used twice a week. The pus decreased rapidly in amount and its character improved. At no time did the temperature go over 100° F. after the tuberculin injections. The dose was increased to about half an ounce of one to seventy-five of old tuberculin. The patient was on the high road to recovery.

Case III. M. L., female, aged sixteen years. Pott's disease, lumbar. Sinuses four, which had been discharging for three years. Strongest solution used one to seventy-five. No temperature reaction. Sinuses closed in six weeks after tuberculin treatment was begun, and did not reopen up to five months after the patient was discharged.

Case IV. H. C., male, aged sixteen years. Upper dorsal Pott's disease. One sinus on right side of neck which had been discharging profusely for eighteen months. On June 16, 1912, old tuberculin was injected into sinus, which was not followed by rise of temperature. Tuberculin was given twice a week, beginning with one to 500 and gradually increasing it to one to seventy-five. Sinus soon began to improve in appearance and the amount of pus markedly decreased. Sinus closed October 15, 1912, reopened a week after, but discharged not more than three or four drops daily for a week and then closed.

In all of these cases we used old tuberculin locally and residual tuberculin systemically. Other similar cases have been treated, but an enumeration of them would be simply repetition.

In conclusion we feel that tuberculin applied locally in the sinuses, associated with well recognized surgical and orthopedic methods of treatment, gives the most satisfactory results.

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OINTMENT IN GRANULATING WOUNDS

A Plea for Their Use in Treatment.

By G. Betton Massey, M. D.,
Philadelphia.

It is now twenty years since I began to use ointments as a protective dressing of the granulating wounds, sometimes very large, produced in the ionic, or cataphoric destruction of malignant growths of the surface. The comparatively quick healing of these wounds without skin grafting, the epidermatization proceeding from the skin edge and leaving but a small space in the centre for the actual cicatrix, has invariably attracted the attention of visiting colleagues, who noted the slight amount of purulent secretion from even large surfaces kept constantly supplied with ample covering of the ointment.

Two facts have recently led me to believe that this practice of treating granulating wounds with ointments has not been so general of late in other hands as it should be. One of these was the announcement of the value of scarlet red ointment and the considerable literature concerning it. It is my belief that many other ointments would yield equally good results. The profession has employed sterile gauze entirely too much on granulating surfaces, under the impression, apparently, that mere sterility was the desideratum, and overlooking the value of protection without irritation. Wounds so treated become foul in spite of sterile dressings, owing to the repeated wounding of the granulations when the layer of gauze into which the granulations have proliferated is removed.

The other experience leading to this brief communication was the recent appearance in my office of a detail man from a large manufacturer of dressings with a specimen of rubber impregnated gauze which was to be used next to the granulating

surface of wounds. It was explained that this gauze would not become attached to the granulations. The sterile gauze was to be placed over it. That such a texture should be recommended for this purpose finally convinced me that ointments were greatly neglected.

During the twenty years mentioned I have employed skin grafting but once, in this case to lessen the distortion of a lower eyelid that would probably have followed its omission.

After many experiments with various ointments I have selected two as the most useful for the small and large wounds remaining after the destruction of malignant growths, and their occasional use in other wounds has shown their general value also. One of these, and the most important, is zinc oxide ointment diluted with four times its weight of semifluid petrolatum, etc. This is used on the wounds so freely that it alone comes into contact with the granulations. A gently antiseptic, gently stimulating action will be shown in a few hours. No water or other irritating substances are allowed to come in contact with the wound surface, and only the surrounding skin is cleaned with soap and water or alcohol when the dressing is changed. If an abundance of the ointment is used the wound will be self cleansing.

The other ointment, which is sometimes used for a time when the diluted zinc oxide ointment appears to have overreddened the granulations by overstimulation, is the boric acid ointment of the pharmacopeia; but this is seldom required.

THE MASSEY SANITARIUM.

SYPHILIS.*

A Discussion of the Serum Diagnosis and Its Use in Medicine, Public Health, and Law.

BY H. M. GREENE, M. D.,
Portland, Oregon.

Errors in the diagnosis of any disease are inevitable, even under the most favorable circumstances. Syphilis is no exception to the rule, as it has a career unsurpassed for the inclusiveness and variety of its manifestations. There is no organ in the body, nor any tissue in the organs, which syphilis does not invade; and it is therefore manifestly difficult to speak, at least at all concisely, of the pathology of the disease, just as it is almost impossible to describe its clinical symptoms without mentioning almost every symptom of every disease known. In fact it has been said that he who knows the whole pathology of syphilis and tuberculosis knows all pathology.

Certain symptoms and clinical signs characteristic of syphilis, when present, are conclusive evidence of its existence; but they are not conclusive evidence of its nonexistence when they are absent. The unreliability of symptoms in every disease has created a demand for laboratory tests upon which we could rely in a given case if a diagnosis could not be made by the clinical symptoms. The diagnosis of syphilis was made solely by clinical symptoms until Wassermann introduced a system of serum diagnosis of syphilis in 1906. The same system, in a modified form, was introduced later by Hideyo Noguchi, associate member of the Rockefeller Institute for Medical Research.

Both systems require a number of reagents which should be fresh and their comparative activity known. One of the reagents, the amboceptor, for the Wassermann test is prepared by immunizing rabbits against sheep blood corpuscles. Washed corpuscles are injected into the rabbit in increasing doses at stated intervals. About ten days after the last injection the rabbit is bled and the serum collected and standardized for use. Another reagent is a five per cent. suspension of washed sheep blood corpuscles in physiological saline solution. In the Noguchi test the amboceptor is prepared in the same manner, but by using human blood corpuscles instead of those from the sheep, and, instead of using a five per cent. sheep blood corpuscle suspension, a one per cent. human blood corpuscle suspension is used in a physiological saline solution.

There are also other variations in the other reagents and in the method of performing the Noguchi test; but the reaction in both instances depends upon one and the same thing, that is, will or will not the corpuscles in the blood corpuscle suspension be dissolved in a given period of time?

If complete hemolysis has taken place, compared with the negative control, the reaction is designated as negative; but if there is complete inhibition of hemolysis, compared with the positive control, the reaction is designated as positive.

To eliminate all error in technic, it is necessary to make two control tests along with the test in question; one control being a known negative and the other control being a known positive. If sixty to seventy per cent. of the bulk of the corpuscles is dissolved the reaction is doubtful and should not be taken into consideration for diagnosis. In a known specific case such slight inhibition should be an indication for further treatment as evidence of the continued presence of syphilis. If there is a faint trace of hemolysis, the main bulk of the corpuscles being intact, the reaction should be called weakly positive, while thirty to forty per cent. hemolysis is designated as faintly positive. Neither the weakly positive nor the faintly positive reaction should be accepted as a definite diagnosis of syphilis without the presence of strong clinical evidence in favor of such a diagnosis.

A number of investigators reporting results in a series of 1,771 cases of known syphilis in the various stages, using both the Wassermann and Noguchi tests on the same cases, report the following:

	Wassermann. Per cent.	Noguchi. Per cent.
208 primary syphilitics	88	94
669 secondary syphilitics	92	98
455 tertiary syphilitics	74	83
305 latent syphilitics	54	68
79 congenital syphilitics	98	98
55 cerebrospinal syphilitics	73	80

The results of comparison show that the Noguchi method gives a higher percentage of positive reactions than the Wassermann; probably because Noguchi uses an antihuman amboceptor.

The value of the serum diagnosis of syphilis cannot be questioned, with either system, in primary, secondary, tertiary, and especially in congenital

*Read before the Fortnightly Medical Club, December 23, 1912.

syphilis; but in latent syphilis, if we depended entirely upon the Wassermann system for a diagnosis, there would be forty-six out of every hundred cases not diagnosticated—approximately one half. Depending upon the Noguchi system, thirty-two cases out of every hundred, or approximately one third would not be diagnosticated; yet this system by many clinicians is supposed to be too sensitive for practical use.

Noguchi made a comparative test, in fifty-nine cases of latent syphilis, of his own system with the Wassermann system, with the result that sixty-one per cent. reacted positively to the Wassermann test and 75.5 per cent. reacted positively to the Noguchi test; which shows practically the same difference as recorded in the whole series, namely, better than fourteen per cent. in favor of the Noguchi test in this class of cases.

There is a suspicion among clinicians that the Noguchi test or system of the serum diagnosis of syphilis might give a positive reaction in non-syphilitic cases.

It is my opinion that Noguchi's authority concerning this question is exceeded by none, as is evidenced by the fact that he has not only revised the Wassermann test and has made it more simple of application and more sensitive, as shown by statistics in known syphilitics, but has also confirmed his findings by devising the luetin reaction and butyric acid test. It is still further evidenced by the fact that Noguchi can confirm his findings by the cultivation of the specific causative factor of syphilis—*Spirochæta pallida*, a feat many times attempted by the most enlightened and patient workers, but never before performed.

In contradistinction, can you produce any evidence other than statistics concerning the reliability of the Wassermann test?

In primary and secondary syphilis not so much depends upon the serum diagnosis, because we have more pronounced clinical conditions from which we may draw conclusions and arrive at a diagnosis; but in tertiary, latent, and congenital syphilis the clinical symptoms in some cases are very indefinite, and it is in these cases especially that a great reliance is placed upon the serum diagnosis. Statistics show that in congenital syphilis the serum diagnosis by both the Wassermann and Noguchi systems is almost conclusive, while in latent syphilis neither one is very dependable.

It is my opinion that if a very faintly positive serum reaction is present in a given case, and by the administration of antisyphilitic treatment the same can be made to disappear, and that after treatment is suspended for a given period of time a faintly positive reaction should return, a diagnosis of latent syphilis should be made and the individual put on treatment. Notwithstanding the fact that he may be healthy himself, he should be regarded as is the typhoid carrier; for there are undoubtedly circumstances under which he could transmit infection to another individual or to his offspring.

It is a delicate matter for the physician to discuss the subject of syphilis with the laity in a number of instances, especially with the unmarried woman who has had sexual intercourse, for she is loath for any man to know that she has lost her virtue and contracted a disease of social impurity. Here the serum diagnosis of syphilis offers an easy solution of the problem.

History informs us that syphilis was described by Nusi King, a Chinese writer, in the year 2637 B. C., and became pandemic in malignant form throughout the known world A. D. 1494, during which time, from all reports, the whole of the human family was syphilized.

When we take into consideration the antiquity of syphilis, the fact that it can be transmitted to posterity, its prevalence throughout the human family, its incurability, and the length of time the infection remains active, the ease with which it is transmitted, the modes by which it is transmitted, and the nature of men and women relative to cohabitation, and also the number of accidental infections, can it be possible that the majority of humanity have escaped it?

For further consideration we may divide the human family into two classes—syphilitic and non-syphilitic.

The percentage of syphilitics is great, no doubt; but I am glad to say that I think the great majority of mankind is not syphilitic; not on their own account, but on account of inherited immunity, a quality of untold value, but not to be boasted of; because if we didn't have inherited immunity we should probably have inherited syphilis, or should have acquired it.

By the presence of syphilis in many cases we can account for repeated miscarriages and for the stillborn. Locomotor ataxia and paralytic dementia are attributed directly to syphilis.

The number of positive reactions to the serum test for syphilis in epilepsy, insanity, idiocy, arteriosclerosis, aneurysms, arthritis deformans, cirrhosis of the liver, and many diseases of the eye, compare markedly with the same number of positive reactions present in known latent syphilis.

While it is my opinion that the majority of mankind is not syphilitic, I am inclined to think that a great many physicians think too much of mankind to suspect that syphilis, a disease of social impurity, might be the cause of the majority of their chronic incurable ailments.

I shall undoubtedly be accused of attaching undue importance to syphilis, but it is appalling to think of the amount of physical suffering and mental anguish and bald heads that syphilis has caused; as it is represented in all classes, the "front row," the "amen corner," as well as in "the class that make burnt offerings on the mountain of Venus." The old darkey said, "Dat pox is de mos' lonesome (meaning loathsome) desez I ebber did see."

Could we not devise some plan to make a serum test for syphilis on every infant born? Ninety-eight out of every hundred syphilitics could then be detected and the blame placed for their condition. It would be easy and effective to tie off a section of the umbilical cord and send it to the laboratory with the birth report.

One day's work of this kind would do more to remove the curse of syphilis from mankind than all the closed towns, restricted districts, and licensed houses of lewdness that the world could create in a thousand years.

For public safety, locomotive engineers should react negatively to the serum test for syphilis. Would you fancy being on a train with an engineer having a delusion of grandeur?

Would it be wise to have a serum test for syphilis made on every man who commits a crime? It would give more information and be more scientific than to propound hypothetical questions. Syphilis might be responsible for the criminal's condition, and it might be that he could be relieved by treatment, which would be more humane and better than punishment.

In some diseases other than syphilis the serum test is positive, viz., malaria, leprosy, yaws, and extreme cachectic conditions. Alcohol and antisyphilitic treatment cause the test to be negative when an active syphilis is present. Alcohol should be prohibited for at least forty-eight hours in a given case if a serum test for syphilis is to be made. Antisyphilitic treatment should be discontinued for about thirty days before the test is made.

All patent and proprietary medicines should be prohibited for two reasons: First. They may contain iodine, arsenic, or some antisyphilitic drug; second, they usually contain as much or more alcohol than does brandy.

It is my opinion that syphilis causes more nervous wrecks than train wrecks; so when an individual sues a railroad company, a serum test for syphilis might place the responsibility for both wrecks.

Credit is hereby given authorities quoted—Noguchi and Osler.

Medical Building.

MORPHINE IN GENERAL PRACTICE.*

By C. J. Douglas, M. D.,
Boston.

The prevention of disease is an important part of a physician's duty. Our work in prophylaxis forms one of the noble and brilliant chapters in modern medical achievement, and one of which every physician is justly proud. And yet, paradoxically, there is one disease of the gravest character which medical men are not only failing to prevent, but are often doing much to spread and multiply. I refer to morphinism. I do not, obviously, mean to say that the medical profession as a whole has any part or lot in the spread of morphine addiction. Most physicians are careful, intelligent, and conscientious in the administration of morphine. But there are many individuals in the profession who, through carelessness or a failure to appreciate its dangers, are recklessly prescribing this drug, with the result that morphinism is often acquired, and their patients become helpless slaves. While morphine has a legitimate place in our materia medica, and is a valuable remedy when properly prescribed, yet our best physicians are increasingly cautious in its use, and never employ it except as a last resort. It is humiliating to admit that the widespread prevalence of morphinism is largely due to too careless prescribing by physicians. These prescriptions are often made by well meaning men, who seem to forget or ignore the dangers and limitations of this drug.

There are several reasons why morphine is so often employed as a universal panacea, and is given to patients suffering from ailments of the most diverse character. Most diseases are accompanied by pain or some sort of distress, and morphine will more promptly and surely relieve pain than any other remedy. Thus to overcome at once the most prominent and annoying symptom is highly gratifying to the patient and his friends. With the sympathetic family standing about and urging the doctor to "do something," it is a great temptation to exhibit a few doses of morphine, thus temporarily relieving the patient's distress and winning the applause of all concerned. If it stopped here it would not be so bad, but often it does not. The physician knows that probably the pain will return as soon as the effect of the morphine has gone. He cannot visit the patient several times a day, especially if he lives at a distance. He may therefore say, "Here are some morphine pills. Take one when you need it for pain." This makes the patient at once a self prescriber of morphine, and has given him a good start on the toboggan slide of morphinism. After he has taken it daily for a sufficient length of time he discovers that it is more essential to his comfort than it was at first, although the original disease may have disappeared. He finds that stopping the use of the drug produces great discomfort, and he also finds that another dose of morphine immediately relieves it. He may hope that after a few more doses he will be able to stop, but the more he takes, the more he has to. And thus floundering in this quicksand, he gets in deeper and deeper, until finally he realizes that he is hopelessly entangled and that all possibility of self help is out of the question.

A respectable country practitioner sent me a patient with this note: "The bearer is a very nervous man and I have been obliged to give him some morphine. Now he objects to giving it up. What can you do for him?" I found it to be a well developed case of morphinism caused by his family physician, as he admits in this ingenuous note. This is not the worst case I might cite, but the patient made a good recovery; but it fairly illustrates how morphinism is often produced. Such prescribing results from ignorance or thoughtlessness or indolence. Such a physician may become a dangerous menace to his community. The indiscriminate prescriber of morphine should be prohibited from practising medicine. It would seem to be almost justifiable to lock him up for the protection of the public.

Every physician should know that a patient cannot take morphine daily for any length of time without reaching a condition in which the abandonment of the drug will not only be "objected to," but will be impossible. Every physician should know that morphine is not a proper remedy for ordinary "nervous" symptoms. Every physician should know that morphine is not a good hypnotic. There are other remedies less harmful and more effective for the purpose of promoting sleep. In ninety-nine cases of insomnia out of a hundred its use is unwar-

*Read before the American Society for the Study of Alcohol and Other Narcotics, Washington, D. C., December 11, 1912.

ranted if not contraindicated. Every physician should know that he cannot place morphine in the hands of a patient so that he may use it at will without the gravest danger of producing a morphine addict.

The members of this society may so thoroughly agree with me that these propositions will appear like commonplace truisms. But many physicians are to-day prescribing this dangerous drug as if they were ignorant of these facts. It is time a clarion call was sounded to remind the careless morphine prescribers of the dangers of inflicting upon their patients a drug addiction.

Another difficulty complicates the situation. Many physicians are themselves addicted to the morphine habit, and the result is that they usually have great faith in the drug as a remedy for all ills—at least their prescriptions indicate such faith. The personal equation often modifies prescriptions in a peculiar way. Each physician is inclined to recommend his own habits. If he is a smoker he recommends smoke. If he is a vegeterian he recommends vegetables. If he uses alcohol to excess, the one thing, in his judgment, that most of his patients require is drink. If he uses morphine, you will find that drug in most of his prescriptions, and he will gradually build up a colony of morphine addicts among his patients. Morphine warps the judgment, and consequently the opinion of a physician who uses it becomes less valuable in proportion to the length of the addiction and the amount of drug taken. It is not surprising, therefore, that his prescriptions are peculiar.

Recognizing morphine as a valuable remedy when properly employed, how can it be exhibited so as to avoid the danger of an addiction? I will make one suggestion which will go far toward accomplishing this result.

Dispense all morphine personally, never employing a written prescription, as it may be refilled, even if otherwise ordered. Never allow the patient to know that he is getting opium or any of its derivatives, giving all such preparations in a disguised form. The object is to prevent the patient from becoming a self prescriber. This is equally important if the patient is a physician. No sick doctor should prescribe for anyone, and he is doubly disqualified for prescribing for himself. It is as dangerous for a physician to prescribe morphine for himself as for a layman to do so. The many cases of morphinism among medical men bear ample testimony to this fact.

In cases of incurable and painful disease, like cancer, for instance, the danger of an addiction need not be guarded against, and no special precautions in the exhibition of opiates need be observed.

It is more eminently true to-day than ever before that the medical profession is the guardian and protector of the public health. During recent years physicians have made brilliant discoveries tending to prevent disease, and in some cases making it almost impossible for the disease to recur. By these discoveries they have so promoted general hygiene and sanitary living that they have added ten years to the average span of human life. All this altruistic work on the part of physicians has resulted in reducing their own incomes. This was plainly inevitable. So markedly is this the case that there are five thousand fewer physicians in practice to-day in the United States than there were eight years ago. What other profession has thus labored for the good of mankind, knowing that the success of its work meant the crippling of its own means of support? Others may give time and energy for the public good when success will bring substantial rewards. But who except physicians are expected to devote their talents and education to the impairment of their own revenue for the sake of the welfare of others? Who but physicians cheerfully commit financial suicide in order to give physical health and length of days to their fellow men? With this noble record for our inspiration, no physician should be willing to have it said that through carelessness or needless ignorance any one has been injured by him. Let us hope that in the future physicians who find it necessary to administer morphine will do so with greater care, and will keep in mind the serious dangers and pronounced limitations of this habit forming drug. For of all the drugs that enslave there is none mightier than this.

321 Centre Street.

Therapeutic Notes.

Treatment of Facial Neuralgia.—Monestié, in a recent issue of *Journal des sciences médicales de Lille,* reports a case of severe trifacial neuralgia in which, all ordinary measures finally proving unavailing, two injections of the following solution were made into the infraorbital canal on two successive days:

℞ Sodii salicylatis, ...gr. viiss (0.5 gramme);
Cocainæ hydrochloridi, ...grs. i¼ (0.075 gramme);
Aquæ destillatæ, ...ʒiiss (10 grammes).
M. ft. solutio.

The injections were administered slowly with a two c. c. syringe, under local anesthesia of the skin with ethyl chloride, the infraorbital foramen having first been located at the junction of the inner third and outer two thirds of the lower margin of the orbit, five mm. below a slight bony elevation palpable with the finger. Almost complete relief from pain was at once obtained, and at the time of writing this result had been maintained for six months.

Treatment of Marasmus in Infants.—T. N. Gray, in the *Journal of the Medical Society of New Jersey* for January, 1913, makes a strong plea for the topical use of codliver oil in feeding infants with congenital or acquired marasmus. The child is wrapped in oil soaked flannel from the axillæ to the crests of the ilia, and a covering of oiled silk is then applied. At twelve hour intervals the flannel is removed and, after the skin has been washed with soap and water, reapplied. In this manner the skin is kept constantly bathed in the oil, and whatever heat the infant possesses is retained. That some of the oil is actually absorbed through the skin is shown by the fact that if the oil soaked flannel is weighed before and after its application, together with the oil scraped from the skin and an allowance of ten per cent. for that which scraping does not remove, from thirty to fifty per cent. of

the oil will be found to have disappeared. Meanwhile, nothing is given by mouth except an ample quantity of water.

The author's statistics bearing on the use of this method show that of thirty-six premature infants thirty were saved; that fifty-two patients with marasmus, nonsyphilitic or tuberculous, all recovered, and that of 220 infants with acquired marasmus, 206 recovered. The immediate results consist of a rise in the temperature, followed by evidences of an increase in the fat and water content in the body. The dryness of the skin and the wrinkles disappear, and later a gain in weight is observed. The treatment is dirty, attended with an unpleasant odor, and destructive of clothing, but in the face of the results obtained these inconveniences are of little consequence.

Turpentine Inhalations.—Plicque, in *Bulletin médical* for June 12, 1912, calls attention to the value of inhalations of oil of turpentine in various respiratory affections. The amount used should never exceed seventy-five grains (five grammes). For use in inhaling apparatus, the oil should be diluted ten times, or even, in some patients, forty times. Menthol, fifteen per cent., may be added.

For indirect inhalation a vessel containing lukewarm water, with one teaspoonful of the oil poured over its surface, should be placed at the foot of the bed.

Rubbing the skin over the chest with the oil produces a derivative effect which may be of value. If excessive irritation is caused, the following mixture may be substituted:

Oil of turpentine, ...30 parts;
Camphor, ...8 parts.

It is to be remembered that certain untoward effects, headache, ptyalism, gastrointestinal disturbances, and loss of weight, may be produced if the turpentine is used with undue freedom.

Treatment of Impetigo.—H. Triboulet, in *Nourrisson* for January, 1913, refers to the fact that the use of ordinary protective dressings is frequently a source of trouble in infants, as the little patients are rendered nervous thereby and prevented from sleeping. Furthermore, frequent changing is necessary if the dressings are to be kept clean, and this is difficult if the lesions are widespread. The following preparation is both effectual and convenient, in that no covering dressing is required:

℞ Fuchsine, ...grs. xv (1 gramme);
Absolute alcohol, ...ʒiiss (10 grammes);
Phenol, ...grs. lxxv (5 grammes);
Distilled water, ...℥iiiss (100 grammes).
M. ft. solutio.

In treating the skin lesions, the superficial friable part of the crusts is first removed by means of compresses soaked in a zinc sulphate solution:

℞ Zinc sulphate, ...grs. xv (1 gramme);
Distilled water, ...℥vii (200 grammes).
Fiat solutio.

Each projecting crust is then individually soaked by direct pressure of cotton, with the fuchsine solution. The surrounding healthy skin should not be touched. Upon allowing the solution to dry on thoroughly, a red glossy covering is formed which is impervious to air. Daily applications are made, and in eight, six, or even three days the crusts will be observed to shrivel markedly, almost disappearing. When the last vestige has fallen off, the underlying lesion will heal under the fuchsin in twenty-four hours.

This measure may be used with similar success in ecthyma, in the presence of somewhat confluent and deep seated crusts in varicella, in infected patches of pemphigus, and in various pyogenic skin infections, e. g., those accompanying nasal or aural suppurative processes.

Treatment of Pediculosis capitis.—Arthur Whitfield, in the *Lancet* for December 14, 1912, describes a procedure by which pediculi of the head in female children can be rapidly exterminated. The patient is placed on her back on a bed, with the head hanging over the edge, and the hair resting in a basin placed on a chair. The following solution,

℞ Phenolis, ...ʒiii (12 grammes);
Aquæ, ...Oi (500 grammes).
Misce.

is then poured over the hair into the basin and sluiced backward and forward until the whole of the hair is thoroughly soaked with it. Saturation of the hair over the ears and at the nape of the neck should especially be secured, since these parts are the sites of predilection of the parasites. The sluicing is to be carried out for ten minutes by the clock. The hair is then lifted from the basin and allowed to drain, but is not dried or even thoroughly wrung out. The whole head is then swathed with a thick towel, or better, with a large piece of flannel, which is fastened up to form a sort of turban. The head is allowed to remain thus for an hour. It can then be washed or simply allowed to dry, as the phenol, being volatile, quickly disappears. At the end of this period every pediculus and, what is more important, every ovum, is dead. The hair itself is not in the least damaged.

Treatment of Seborrheic Keratosis.—D. W. Montgomery, in the *Journal of the American Medical Association* for January 4, 1913, states that in this common affection, which occurs oftenest in elderly people, and of which light, especially its actinic rays, is now considered to be in many instances the exciting cause, curetting and the application of trichloracetic acid constitute the most effective local measures. Patches may, however, be held in check and even diminished in size by the following ointment:

℞ Acidi salicylici, ...gr. x (0.6 gramme);
Sulphuris præcipitati, ...ʒi (4 grammes);
Adipis lanæ hydrosi, } .....āā ℥ss (15 grammes).
Petrolati, }
M. ft. unguentum. Sig.: Rub in once a day.

If the skin surface is irritable and inclined to inflame, the soothing effect of the following combination may be taken advantage of:

℞ Hydrargyri oxidi rubri, } ...āāgr. x (0.6 gramme);
Camphoræ, }
Adipis lanæ hydrosi, } .....āā ℥ss (15 grammes).
Petrolati, }
M. ft. unguentum. Sig.: Rub into the affected skin at night.

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THE TREATMENT OF ASTHMA BY ORGANOTHERAPY.

In 1911 Januschke and Pollak found that epinephrin caused dilatation of the bronchioles after these minute bronchi, which, we may recall, open directly into the air cells, had been caused artificially to contract by muscarine. A similar effect was recently (1913) obtained by Jackson from epinephrin after pilocarpine had been used to cause contraction of the same bronchioles. This action, added to the probable participation of the adrenal secretion in the respiratory process itself (an action pointed out in this country ten years ago), accounts for the beneficial, and sometimes marvelous effects of intramuscular injections of a solution of epinephrin in arresting a paroxysm of asthma. Weiss found that instantaneous relief could be afforded with even greater certainty, and in the gravest paroxysms, by giving hypodermically a solution containing epinephrin and an extractive of the posterior lobe of the pituitary, the doses depending upon the age of the patient. A second injection was required in only ten cases out of three hundred to arrest the attack. From his viewpoint the pituitary, thyroid, adrenal, and genital glands influence not only the composition of the blood, including its cellular elements, but also, in keeping with the view advanced in this country, the intake of oxygen and the output of carbon dioxide. The introduction of pituitary and adrenal extractives into the organism is compensatory therefore, furnishing as they do to the blood some of its physiological constituents which it lacks. This may be deemed an essentially scientific procedure when compared to the use of toxics, such as morphine, cocaine, etc., which, besides, entail the danger of initiating morphinism, cocainomania, or kindred habits, even more dangerous than asthma itself. We may recall that two years before Weiss, S. Solis-Cohen, of Philadelphia, recommended the infundibular extract, orally or hypodermically, for the arrest of paroxysms of bronchial asthma. He noted, however, that its action was slower than that of epinephrin, though more persistent. Weiss, by combining the two agents, avoids their defects and preserves their advantages.

In the curative treatment of bronchial asthma Léopold Lévi and de Rothschild have recommended the internal use of thyroid and corpus luteum, having obtained satisfactory results in fifty per cent. of their cases. Better results may be obtained, however, in true bronchial asthma by giving desiccated thyroid gland, one grain, and desiccated adrenal gland, two grains, three times daily in adults. The spasmogenic toxics in some cases are the products of nucleins ingested in excessive quantities: in such cases the diet list should be reduced if there is reason to believe that the patient eats to excess, or red meats and eggs may alone be forbidden, and the intake of water somewhat increased. The fact that asthma may be due to many different causes and that the pathogenic factor should be carefully sought and eliminated if possible, need hardly be emphasized.

ACTIVE IMMUNITY TO DIPHTHERIA.

Von Behring has again been devoting his attention to the problems of diphtheria. This time he has evidently worked out a practical method by which active immunity may be produced. Every physician has felt the need of better means for protecting "contacts" than can be obtained by the use of antitoxic serum. The proteins of horse serum are alien to the human body and are therefore eliminated rapidly with the result that the antitoxine and the immunity conferred by it disappear sometimes within a week. Furthermore, the medical profession has become so hysterical over the rare occurrence of the alarming symptoms of anaphy-

lactic shock that one hears too frequently "Why immunize? Diphtheria is so easily cured, why take the risk until it becomes necessary?"

Von Behring has evidently used the method of injecting mixtures of toxine and antitoxine so that there is very little danger of accidents due to an overdose of toxine. It is well known that harmless mixtures of toxine and antitoxine actively immunize animals injected with them. In guinea-pigs immunity appears more quickly and likewise disappears more quickly if there is an excess of antitoxine. The converse is also true; that is, if there is an excess of toxine, the production of antitoxine becomes evident later, but the resultant immunity is of greater duration.

There is one point nevertheless which has not been overcome by previous investigators. Ehrlich, in his work upon the constitution of diphtheria toxine, showed that one of the substances present is toxone. Toxone has less avidity for antitoxine than has either toxine or toxoid, the other important products of the diphtheria bacillus when grown upon artificial culture media. Toxone is the poison which causes postdiphtheritic paralysis. If then it should ever happen that in mixtures of toxine and antitoxine there was not quite sufficient antitoxine, the injection of the mixture might cause paralysis. Another objection that has been raised to the general use of methods for the production of active immunity is the fact that its production is necessarily slow—possibly requiring as much as two weeks before there is any appreciable production of antitoxine, and it is during just this period that immunity is desired most. In institutions or in homes where diphtheria has appeared antitoxine is incomparably to be preferred, because immunity is obtained by it within a few hours, and by the time that passive immunity has disappeared the greatest danger of infection is usually over.

The most systematic work upon the production of active immunity to diphtheria has been done by Theobald Smith (*Journal of Experimental Medicine,* 1909, xi, p. 241; *Journal of Medical Research,* 1910, xviii, pp. 433-443). The method described by Park (*Proceedings of the New York Pathological Society,* May, 1903, pp. 139-140) for the rapid production of antitoxine in horses is the common practice in many antitoxine laboratories. Park's method consists in using a mixture of toxine and antitoxine for the initial doses given the horse. After two or three such doses very much larger quantities of toxine alone may be injected than it would be possible to reach even after two or three weeks if toxine alone were used from the start. The first suggestion, however, that mixtures of toxine and antitoxine could be used to confer immunity or to produce antitoxine seems to have come from Babes (*Bulletin de l'Académie de médecine,* 1893, 3d series, xxxiv, No. 32, pp. 206-214). Madsen and Dreyer (*Thirtecnth Congress of Medicine,* Paris, 1900, Section in Bacteriology and Pathology, pp. 40-47) made some observations upon the phenomena following the use of mixtures of toxine and antitoxine in which the toxine was not entirely neutralized. The antitoxine production was therefore believed by them to be due to the action of the unneutralized toxone. It has been shown, however, that even though sufficient antitoxine is added to neutralize the toxone entirely, antitoxine production results. This phenomenon is analogous to the production of immunity by the use of sensitized vaccines, the literature on which has been so much enriched by the contributions of Besredka. The suggestion that there is a chemical difference between the combining group of molecules and the group which has to do with the production of antibodies has received much support.

We are informed that it is von Behring's thought that persons known to be excessively susceptible to horse serum may be immunized in cases of emergency by serum from persons who have been treated with the toxine-antitoxine mixtures.

INDUSTRIAL COLONY FOR THE TUBERCULOUS.

All who have had experience with the control of tuberculosis realize the many difficulties to be overcome. Especially in connection with sanatorium treatment, much discouragement has resulted from the fact that, in many instances, patients discharged with their disease arrested are compelled to return to the crowded and, for them, unhealthful environment of a large city, where they promptly relapse and so nullify most of the good work which has been done by the sanatorium.

The lack of suitable occupations under proper conditions for such patients has been the great stumbling block in the way of more lasting and substantial progress.

A number of years ago, Dr. Hermann M. Biggs urged the establishment of an industrial colony in a locality in the country where the climatic conditions were favorable for tuberculous patients, where the land was cheap and where sanitary workshops could be erected, and where employees could spend the unemployed hours of the day, twelve or fourteen hours at least, out of doors. Dwellings with outside sleeping porches would be provided, patients and their families would be kept under continued

supervision, all of the conditions of life, including their food and dietary, would be supervised, and the earliest indications of return of disease would be immediately recognized.

Through the efforts of Doctor Biggs, a law has just been passed by the Legislature and signed by the Governor authorizing any municipality or corporation maintaining a hospital or sanatorium for the treatment of tuberculosis to establish and maintain workshops in connection therewith, for the production of articles or supplies required by such hospital or sanatorium and by any other institution or department of such municipality. No person is to be employed in the workshop so established, except in a supervisory capacity, unless he is or has been a patient in the tuberculosis hospital or sanatorium.

This bill represents an enormous step forward in the administrative control of tuberculosis, for it will enable discharged patients to live and work under sanitary conditions. We understand that it is proposed to care for the families of such discharged patients in an industrial colony adjacent to such sanatoria and under the supervision of the sanatorium authorities.

THE MOVING PICTURE IN MEDICINE.

In medicine, as in pedagogy in general, there is constant discussion as to what is the best way to teach. Shall all subjects be taught by practical application, by didactic methods entirely, by a combination of both, or by something completely different? It is well understood that impressions received by the eye are retained more firmly as a rule than by the ear; yet both senses may become wearied if the one is used to the exclusion of the other. Consequently much effort is expended in finding some way that will enable the student to grasp thoroughly a subject in the shortest space of time with the least unnecessary expenditure of effort. This has to be done because the medical course is becoming more and more crowded each year.

The form that is obviously of least trouble to the instructor is the didactic. He says what he wishes and the student remembers what he can. To assist in the work the next step is to use charts or illustrations. They are of the greatest value and should be constantly employed. But there is something more valuable than a printed chart or picture, and that is the original from which they were taken. It is commonly impossible to carry out this idea to its completion. The internist must take up his lectures in some regular order. His clinics represent the attempt to do away with his didactic methods, but he has to take his patients as they come. The pathologist first used alcohol specimens in addition to illustrations, then, when methods were elaborated for the preservation of tissues in their natural colors, a great advance was made.

But the drawback to all, excepting the clinics, is that they represent dead structures. Cannot some method be employed that will give at the time when it is needed in the lecture course the picture of the living individual? Such a method has been found in the use of the cinematograph, the moving picture camera. By means of this instrument one is now enabled to obtain, for future presentation, cases of rare diseases, as well as of the ordinary diseases. The lecturer is no longer dependent upon a mere description, but after an appropriate discussion can exhibit the actual case. Now that psychiatry seems to be the most recent acquisition to the medical curriculum, the neurologist is put to it to get material. Take such a common disease as epilepsy: How many recent graduates have ever seen an attack? What description of dementia, of an ataxic gait, or of various tics can equal the moving picture of the actual patient? Various forms of similar conditions can be exhibited for comparison. In other words, the wards of a large hospital are immediately at hand. Then, too, the possibilities of this method in the fundamental branches are almost limitless now that pictures of microscopic bodies can be taken. One who has seen the capillary circulation in action, the leucocyte forming pseudopods, or the *Treponema pallidum* in syphilitic fluids will never forget the appearance. At present this method is in its infancy and consequently very expensive. But who can tell how soon a moving picture outfit will be a part of the equipment of every medical school, with the development of a central exchange from which films can be obtained?

RADIOACTIVITY AND VEGETATION.

Gabriel Petit and R. Ancelin reported to the Académie des sciences in Paris on March 17th, that their comparative experiments on the effects of plain water and that rendered radioactive, on vegetation showed unmistakably that the latter had a most stimulating influence. An interesting detail in the report, according to *Presse médicale* for March 29, 1913, is the manner in which these experimenters get a radioactive water. They do not use pure radium salts, but have devised an extremely economical process of simply allowing water to remain from twenty-four to forty-eight hours in tanks made from cement derived from refined ores containing radium. This ingenious idea they owe to Henri Farjas, a civil engineer, who has thus been able to render at will both water and air radioactive by simply coating baths or reservoirs with a cement of the kind described.

ALLEGED TOBACCO ANGINA PECTORIS.

Charles Fiessinger, according to *Semaine médicale* for April 2, 1913, in an address before the Académie de médecine on April 1st, warned his hearers against attributing severe angina solely to the influence of tobacco. Angina from tobacco might indeed be agonizing, but it would always cease with the withdrawal of the narcotic; where the angina persisted despite this withdrawal, it was necessary to make a Wassermann test for syphilis. Fiessinger gave details concerning three cases in which a positive reaction indicated the proper mercurial treatment, which was followed by immediate relief after other measures had proved fruitless.

News Items.

Obstetrical Society of Philadelphia.—The stated meeting of this society, scheduled for Thursday, May 1st, will be held on Friday, May 9th, instead. On the latter date a joint meeting will be held with the Chicago Gynecological Society.

American Pediatric Society.—The annual meeting of this society will be held in Washington, D. C., on May 5th to 7th, with headquarters at the New Willard Hotel. Dr. John Lovett Morse, of Boston, is president of the society, and Dr. Samuel S. Adams, of Washington, D. C., secretary.

Hampden District Medical Society.—At the annual meeting of this society, held in Springfield, Mass., on April 15th, Dr. George D. Weston, of Springfield, was elected president; Dr. Abbott L. Cooley, of Chicopee Falls, vice-president, and Dr. Hervey L. Smith, of Springfield, secretary and treasurer.

A Meeting of Alienists and Neurologists.—Arrangements have been made for a meeting of the Alienists and Neurologists of the United States to be held in Chicago, June 24th to 27th, the week following the meeting of the American Medical Association in Minneapolis. This meeting is the outcome of a conference held in Chicago last year.

New Laboratory for the Wistar Institute.—The Wistar Institute of Anatomy at the University of Pennsylvania is to have a well equipped laboratory in the near future. The old police station at Thirty-seventh Street and Woodland Avenue is being remodelled for the purpose, part of it being fitted up as an animal house in which to carry on research work. Later a modern building will be erected to take the place of the present structure.

First Joseph Leidy Lecture.—The first lecture on the Joseph Leidy Memorial Foundation was delivered on the evening of April 17th in Houston Hall, University of Pennsylvania, by Edmund Beecher Wilson, professor of zoology at Columbia University. On this occasion a tribute was paid to the life and services of Joseph Leidy, the student, teacher, and investigator, by Charles Sedgwick Minot, professor of comparative anatomy at Harvard University.

Meetings of Philadelphia Medical Societies.—Medical societies will meet in Philadelphia during the coming week as follows: Monday, April 28th: Section in General Medicine of the College of Physicians and St. Agnes' Hospital Clinical Society; Tuesday, April 29th: Medicolegal Society and St. Mary's Hospital Clinical Society; Wednesday, April 30th: Annual banquet of the Northern Medical Association; Friday, May 2d: Kensington and Southeast Branches of the County Society.

Cape May County, N. J., Medical Society.—At the twenty-ninth annual meeting of this society, held in Cape May recently, under the presidency of Dr. Margaret Mace, the following officers were elected to serve for the ensuing year: President, Dr. Clarence W. Way; vice-president, Dr. E. Physick; secretary and reporter, Dr. Eugene Way; treasurer, Dr. H. H. Tomlin; censors, Dr. Duncan Blake, Dr. I. N. Griscom, and Dr. H. H. Tomlin. Two interesting addresses were delivered, one by Dr. James A. Kelly, of Philadelphia, on the Operative Treatment of Fractures, and the other by Dr. Morris Booth Miller, of Philadelphia, on the Nonoperative Treatment of Fractures.

Temple Medical School Standards.—The trustees of Temple University, Philadelphia, have approved the entrance requirements recommended by the American Medical Association, to include one year college credits in chemistry, physics, and biology, and a modern language, to take effect on January 1, 1914. The trustees have also endorsed the one year hospital work after graduation, and, with two hospitals under control of the university, feel well prepared to take care of this feature.

College of Physicians of Philadelphia.—At the next meeting of the Section in General Medicine, to be held on the evening of April 28th, the following papers will be presented: Report of a Case of Pellagra, by Dr. Joseph Sailer; Treatment of Hyperchlorhydria, by Dr. A. A. Stevens; Antityphoid Vaccine during the Course of an Epidemic, by Dr. C. J. Hunt, of the State Board of Health; Use of the Clinical Thermometer, by Dr. H. R. M. Landis; Value to the General Practitioner of Special Training in Pulmonary Diseases, by Dr. Charles M. Montgomery. All physicians are cordially invited to attend.

Henry Phipps Psychiatric Clinic Opened.—The formal opening of the Henry Phipps Psychiatric Clinic of Johns Hopkins Hospital, Baltimore, took place last week, the exercises lasting three days, April 16th, 17th, and 18th. One of the principal speakers was Sir William Osler, regius professor of medicine at Oxford University, whose subject was Specialism in General Hospitals. Other speakers were Dr. K. Heilbronner, professor of psychiatry in the University of Utrecht, Dr. W. McDougall, professor of mental philosophy at Oxford University, Professor Bleuler, of the University of Zurich, Professor O. Rossi, of the University of Florence, Dr. F. W. Mott, of London, and Dr. Adolph Meyer, director of the clinic, who gave the closing address.

American Therapeutic Society.—The fourteenth annual meeting of this society will be held in Washington, D. C., on Monday and Tuesday, May 5th and 6th, with headquarters at the New Willard Hotel. An excellent programme has been arranged, an interesting feature being a symposium on Vaccine Therapy, which will form a part of the programme for Monday afternoon. The officers of the society are: Dr. Noble P. Barnes, of Washington, D. C., president; Dr. Howard Van Rensselaer, of Albany, N. Y., Dr. Robert T. Morris, of New York, and Dr. Francis M. Pottenger, of Los Angeles, vice-presidents; Dr. Lewis H. Taylor, of Washington, secretary; Dr. A. Ernest Gallant, of New York, treasurer. Complete programmes may be obtained from the secretary, whose address is The Cecil, Fifteenth and L Streets, N. W., Washington, D. C.

Kansas Medical Society.—The forty-seventh annual meeting of the State medical society of Kansas will be held in Topeka on Wednesday and Thursday, May 7th and 8th, under the presidency of Dr. George M. Gray, of Kansas City. The other officers of the society are: Dr. H. G. Welch, of Hutchinson, Dr. Clemens Klippel, of Hutchinson, and Dr. G. A. Blasdel, of Garnett, vice-presidents; Dr. Charles S. Huffman, of Columbus, secretary; Dr. L. H. Munn, of Topeka, treasurer; Dr. S. G. Stewart, of Topeka, librarian. Dr. O. P. Davis, of Topeka, is chairman of the committee on arrangements. The House of Delegates will meet at nine o'clock on Wednesday morning, and at ten a scientific session will be held, the first item on the programme being the annual address of the president. Nearly thirty papers on topics of interest to the general practitioner will be presented, and the meeting gives promises of being very successful.

In Memoriam.—The following resolutions were passed by the council and adopted by the New York Academy of Medicine in memory of Dr. Algernon T. Bristow:

WHEREAS, The Council of the New York Academy of Medicine has learned with profound sorrow of the death of Dr. Algernon Thomas Bristow, therefore be it

Resolved, That the Council hereby records its appreciation of Doctor Bristow, the man and the physician. He became a fellow in 1901 and served as vice-president from 1906 to 1909. As an officer, as a member, and in his private practice he exemplified all that is best in the medical profession. He combined to an unusual degree the practical and the ideal in his work. Doctor Bristow was a man of great public spirit and much interested in all the activities of the academy. His wise judgment and genial personality will be greatly missed. Therefore be it

Resolved, That a copy of these resolutions be sent to the family and to the medical journals.

WILLIAM M. POLK, M.D., President.
CHARLES F. ADAMS, M.D., Recording Secretary.

WISNER R. TOWNSEND, M.D.,
L. EMMETT HOLT, M.D.,
Committee of the Council.

Gifts and Bequests to Hospitals.—By the will of Stephen Sanford, who died recently in Amsterdam, N. Y., St. Mary's Hospital, the Amsterdam City Hospital, and the Sarah Jane Sanford Home for Elderly Women will each receive $20,000.

At the annual meeting of the board of trustees of the Homoeopathic Hospital of Rhode Island, Providence, the executive committee announced bequests to the institution aggregating $150,000, all of which were subject to life interests and accordingly not available at this time.

By the will of Ferris S. Thompson, who died in Paris on February 18th, two trust funds aggregating $155,000 will eventually go to St. Luke's Hospital, and the Woman's Hospital will get a direct bequest of $25,000 and the principal of several trust funds. The American Hospital in Paris will receive $25,000, and Mercy Hospital, Chicago, $100,000, together with $5,000 from a trust fund left to the testator's wife and $100,000 upon her death.

By the will of John Fritz, late of Bethlehem, Pa., the Methodist Hospital of Philadelphia will receive $21,000.

A Campaign against Cancer Planned.—At a meeting held at the home of Dr. Clement Cleveland, on the evening of April 22d, steps were taken to organize a National Anticancer Association and begin a campaign of education on the prevention of cancer. A committee of organization was appointed and the general plans outlined. The chief object of the organization is to educate the public to recognize the early symptoms of the disease, by means of magazine articles, leaflets to be distributed through boards of health, social workers and women's clubs, special instruction in nurses' training schools, and public lectures. The campaign of education is addressed chiefly to women. Among the physicians present at the meeting were Dr. Henry E. Coe, president of the American Gynecological Society; Dr. Robert Abbe, Dr. Joseph D. Bryant, Dr. Charles L. Gibson, and Dr. Joseph Brettauer. Two committees already appointed for the consideration of such an organization were represented at the meeting, one organized at the annual meeting of the American Gynecological Society last May, and the other at the Surgical Congress in September.

Purification of Water.—Officers of the United States Public Health Service on duty at Evansville, Ind., Cairo, Ill., Louisville, Ky., and Memphis, Tenn., have been instructed, in view of the possible contamination of public water supplies on acount of the flood conditions, to recommend to health officers and other proper authorities the treatment of public water supplies with hypochlorite of lime, and where there is no public water supply that hypochlorite solution be distributed free to private homes for use in the purification of drinking water. A satisfactory solution may be made by adding one teaspoonful of chlorinated lime to one pint of water. Of this solution one teaspoonful may be added to two gallons of drinking water, which should then be allowed to stand for at least one half hour before being used. These officers have also been instructed that all cases of sickness in which there is fever be reported to enable the authorities to ascertain the presence of typhoid fever, smallpox, or other diseases that might become epidemic, before they have gained too great a foothold. The isolation of all cases of communicable diseases is also recommended.

Civil Service Examination.—Among the positions for which the New York State Civil Service Commission will hold examination on May 3d, is that of Physician (regular), female, New York State Training School for Girls, Hudson, N. Y. Examination open to women who are licensed medical practitioners in this State, who have graduated from a registered medical school, and who since graduation have had one year's experience on the resident medical staff of a general hospital, or in a State hospital or institution, or have been engaged for three consecutive years in the practice of medicine. Subjects of examination and relative weights: Written examination, covering anatomy and physiology; hygiene, bacteriology and pathology; chemistry, organic, inorganic, and physiological; materia medica and therapeutics (drugs, psychic, electric, and physiological); surgery, obstetrics and gynecology; internal medicine and diseases of children; diseases of the mind and nervous system; diseases of nose, throat, and skin, 6; education, experience, and personal qualifications, 4. A vacancy exists in the position of assistant physician at $1,000 per annum and maintenance, increasing to $1,200, and in the position of physician at $1,500 to $1,800 and maintenance.

Examination for Assistant Surgeons in the Public Health Service.—Boards of commissioned medical officers will be convened to meet at the Bureau of the Public Health Service, Washington, D. C., and at the Marine Hospitals in Boston, Chicago, New Orleans, and San Francisco, on May 5th and June 9th, for the purpose of examining candidates for admission to the grade of assistant surgeon in the Public Health Service. Candidates must be between twenty-three and thirty-two years of age, graduates of a reputable medical college, and must furnish testimonials from two responsible persons as to their professional and moral character. Service as internes in hospital for the insane or experience in the detection of mental diseases will be considered and credit given in the examination. Candidates must have had one year's hospital experience or two years' professional work. Successful candidates will be numbered according to their attainments on examination, will be commissioned in the same order, and will receive early appointments. After four years' service, assistant surgeons are entitled to examination for promotion to the grade of passed assistant surgeon. Assistant surgeons receive $2,000, passed assistant surgeons $2,400, surgeons $3,000, senior surgeons $3,500, and assistant surgeon generals $4,000 a year. The tenure of office is permanent. Officers traveling under orders are allowed actual expenses. For further information regarding the scope of the examination address a communication to the office of the Surgeon General, United States Public Health Service, Washington, D. C.

The New York Academy of Medicine and Tenement House Legislation.—At a meeting of the Academy of Medicine, held on Thursday evening, April 17th, Dr. Abraham Jacobi referred to certain erroneous statements that had been made in the public press and elsewhere regarding the action taken by the New York Academy of Medicine in regard to the tenement house law. He first presented the resolutions adopted by the council of the academy in April, 1911, which were taken up for reconsideration by the council in December, 1912, and referred to the Public Health, Hospital, and Budget Committee for study. This committee reported to the council on February 24, 1913, as follows: "The Public Health, Hospital, and Budget Committee has carefully considered for a long time the question of the open air tenements, has held a hearing at which the Tenement Economics Society, the Tenement House Committee of the Charity Organization Society, the Tenement House commissioner, and others were represented, has inspected the type of building under consideration, and after thorough discussion has been unable to reach an agreement." Before this report was handed in the following statement appeared in the Sunday edition of a New York newspaper: "During the past few weeks conferences between committees of the Charity Organization Society, the Tenement Economics Society, and the New York Academy of Medicine have resulted in an agreement to drop the seven foot clause in the present tenement law. The present law demands that no room in a tenement house be less than seven feet wide." This statement was untrue, Doctor Jacobi said, as the New York Academy of Medicine had never considered the cutting down to a width of less than seven feet, that means six feet, nor was such a proposition ever up before the Pediatric Section, nor before the Council. The reporter who made this statement made a mistake, for which the Academy must not be held responsible. Doctor Jacobi's report stated further that the New York Academy of Medicine was not responsible for a statement made by a Fellow of the Academy to the effect that the Academy was endorsing the water closet on the stairs of tenements, and also the measure that a board of appeal should have the power to override or overrule and alter the decisions of the Tenement House Commission. This the Academy had not done, and the assertion was not based on anything but a mistake which should be corrected by referring to the facts. Doctor Jacobi concluded his remarks by presenting a motion that these two points be referred to the Council, with the direction to verify or correct or officially deny the statements made in public meetings by one of the Fellows and others, and in newspapers, that the New York Academy of Medicine may be quoted as recommending firstly: Six feet tenement house rooms in place of seven, and secondly, the establishment of a Board of Appeal authorized to override or overrule and alter the decisions of the Tenement House Commission. The motion was passed.

Pith of Progressive Literature.

BERLINER KLINISCHE WOCHENSCHRIFT.

February 3, 1913.

Estimation of Carbon Dioxide Tension in Alveolar Air by Means of the Interferometer.—M. Hahn and R. Heim show from their previous experiments that in the portable interferometer of Zeiss we possess a very handy instrument for the easy, accurate, and convenient estimation of carbon dioxide tension on ambulatory patients for clinical purposes. The reading of the scale is quickly learned after a little experience. The instrument is also suited for theoretical examinations, especially in pharmacological experiments.

Histological Blood Picture in Severe Cases of Infantile Scorbutus (Möller-Barlow's Disease).—F. Glaser reports and illustrates two cases of infantile scorbutus; the second of these was in a boy of seven years, which is a great rarity. Under proper diet both patients were cured.

Degenerative Diseases of the Cornea.—R. Seefelder is desirous of explaining two degenerative diseases of the cornea to a large and nonopthalmological circle of readers. The conditions are not to be lightly passed by, as they endanger the function of both eyes. They are the marginal degeneration of the cornea and dystrophia epithelialis corneae.

Itching Relieved by Autogenous Vaccine.—A. Schischlo advises the use of autogenous vaccine in cases of toxic cutaneous itching.

Dosage of Arsenic Preparation in Drops.—W. Becker found that the patent glass ampoules are unreliable in respect to dose and, to avoid poisoning, the very active drugs should not be prescribed in drop form, but according to weight, at least until the administration of drop methods is perfected.

February 10, 1913.

Surgery of the Heart and Pericardium.—L. Rehn gives a short résumé of the present status of cardial and pericardial surgery. Although the hopes of Mikulicz for the surgical treatment of defective valves have not been realized, still the results in injuries of the heart, inflammatory processes of the pericardium, emboli of the pulmonary arteries, and cardiac syncope are encouraging.

Case of Isolated Traumatic Paralysis of the Suprascapular Nerve.—Behrend reports this lesion, occasioned by the blow of an iron bar. No operation was performed, owing to the relatively mild functional inconvenience.

Lepra Bacilli in the Circulating Blood and in the Heart Blood of a Lepra Fetus.—M. Rabinowitsch's investigations show that lepra bacilli circulating in the mother's blood can be transmitted to the fetus in utero through hematogenous channels.

Tuberculosis of the Joints.—L. W. Ely says that pure primary tuberculosis of the joints begins only in the synovia or lymphatic marrow. The presence of both these substances bears a relationship to the functional ability of the joints; when the latter ceases both disappear. The disease also comes to an end. The most important factor in the therapy of the tuberculous joint is to stop its functioning. Conservative treatment is sufficient in children. In adults the function of the joint must be entirely annulled by radical operation. When a secondary infection is added to the tuberculosis, so that the tissues which usually remain immune are attacked, there is added to a purely local and relatively harmless disease a spreading and dangerous one. Therefore the second therapeutic principle should be, Avoid secondary infection.

February 17, 1913.

A Papillomatous and Carcinomatous Tumor in the Stomach of the Rat Caused by a Nematode.—J. Fibiger says that a hitherto undescribed nematode causes an endemic unknown disease in the stomach and esophagus of the rat. The intermediary host in the development of the nematode is the cockroach. The disease was noticed endemically in wild rats. It can also be produced experimentally by feeding the rats with the intermediary host. In the incipient stage the disease consists of epithelial hyperplasia and inflammation, while if it progresses beyond this a form of papilloma ensues which may develop into colossal proportions. The papilloma is capable of being the preliminary stage of a malignant epithelioma with infiltrative heterotopic growth of the epithelium. Thus for the first time it has been possible to produce metastatic carcinoma experimentally in animals. The hypothesis of Borrel and Haaland that nematodes may produce the development of malignant growth in mice and rats is proved by the experiments of the author. Neither the parasites or the eggs of the parasites were found in the metastases.

Gastric Juice Anaphylaxis. — E. Manoiloff says that the assertion of Levierti that the gastric anaphylaxis observed in patients suffering with gastric carcinoma is specific is correct. From experiments on eleven persons, eight of whom were carcinomatous, it was shown that by means of the gastric juice of a carcinomatous patient anaphylactic reactions can be produced in animals previously treated with extract from a carcinoma, but that no anaphylactic reactions are produced by reinjection with the gastric juice of patients having extragastric carcinoma.

February 24, 1913.

Localization in the Cerebellum.—Max Rothman has succeeded in making mere definite and enlarging the localization in the cerebellum by means of experiments on dogs and monkeys.

Pancreas, Liver, and Carbohydrate Metabolism.—J. Wohlgemuth has shown that animals whose pancreatic ducts have been tied and whose pancreatic secretions have therefore found entrance into the blood stream, flooding it with diastatic ferments, undergo a marked change in their carbohydrate metabolism. The glycogen disappears from the liver, the tolerance for sugar is compromised, and the sugar of the blood is increased beyond the normal. The pancreas, besides being in close relation to the liver, adrenals, and thyroid, is also in relationship with the kidneys.

Further Reports on the Treatment of Anemia, Leuchemia, and Rheumatic Disturbances by Thorium X.—A. Bickel relates cases which prove that thorium x is a symptomatically curative sub-

stance for the treatment of acute rheumatism, leuchemia, and anemia.

Nonoperative Treatment of Carcinoma.—A. Theilhaber is of the opinion that carcinoma is a disease of the connective tissue which expresses itself in atrophy of the subepithelial connective tissue. When the latter is poorly nourished, sparse and atrophied connective tissue cells, with a lessened power of proliferation and narrowed bloodvessels result. The therapy should follow Nature's healing method in carcinoma, i. e., encourage local hyperemia and local and general hyperleucocytosis. Hospitals should be equipped with special departments for the treatment of carcinoma for the purpose of furthering experimentation along these lines.

WIENER KLINISCHE WOCHENSCHRIFT.

March 6, 1913.

Treatment of Leucocythemia with Benzol.—Stanislaus Klein declares that the internal use of benzol, although it may have a favorable influence on the symptoms of leucocythemia, cannot be regarded as a sure remedy, efficient in every case. It is more effective in connection with the x rays, for the effect of the latter is increased by its use, and its effect is much more intensive and rapid upon organs that have been previously irradiated. The remedy is not borne well by all patients. The author has tried to give it in capsules, mixed with equal parts of olive oil, but finds that it seems to be borne better by the majority when given in milk, thirty drops of the mixture up to ten times a day. Much smaller doses suffice in particularly mild cases that have been treated with the x rays. He has also used the remedy subcutaneously, and finds that pure benzol causes a severe burning at the place of injection, that lasts for several days; the injection of equal parts of benzol and olive oil is better borne.—S. Stern reports a case of leucocythemia in which all of the symptoms were greatly improved by the administration of benzol. The leucocytes were reduced in 100 days from 260,000 to 13,300, while the erythrocytes were increased from three and one half to five and one half millions. The spleen became reduced in size to normal, the body weight increased, and the general condition was very good at the end of that time. How long this apparent cure may last is uncertain.

March 13, 1913.

Effect of Milk Diet upon Various Kinds of Strictures of the Stomach and Duodenum, and a Procedure for the Diagnosis of Spastic Ulcerative Strictures.—Siegfried Jonas says that a stricture in the stomach or duodenum is influenced by a milk diet to the same degree as its fundamental cause; hence a milk diet produces no change in strictures due to cicatrices, adhesions, or tumors, while autochthonic or reflex strictures caused by ulceration disappear under such a diet, because the irritation of the exposed nerves is relieved, and spasms excited by which irritation disappear. The disappearance of the symptoms of stricture under a milk diet points, therefore, to an ulceration as the underlying cause, while their persistence does not exclude it. Röntgenographs before and during the milk diet serve to determine whether a stricture of the pars media of the stomach, or a six hours' remains after a bismuth meal in the duodenum, depends on ulceration, and whether less than half of the bismuth meal remaining in the stomach at the end of six hours, the pylorus being normally patent depends on ulceration in the stomach or duodenum.

Neosalvarsan.—Wilhelm Lier says that in consequence of its ready solubility with neutral reaction neosalvarsan is very convenient to use, and that it produces its best effect in cases of primary and tertiary syphilis, as well as in the infectious, moist forms of the secondary period. In primary syphilis the outlook for a true abortive cure through neosalvarsan appears to be very favorable. It is also of good service in malignant, ulcerous syphilis, though only in large doses frequently repeated, while in the dry forms its effect is inferior to that of mercury. It should always be given in conjunction with the latter. Neosalvarsan is particularly indicated in those cases in which severe stomatitis, or irritation of the kidneys is produced by mercury, as the treatment then need not be interrupted. He considers the intramuscular injection preferable. It is little if at all painful, leaves no infiltrate, and may be given to ambulatory patients.

Infantile and Juvenile Tabes.—Hans Barkan maintains that the nervous disease which appears in childhood and presents as symptoms primary atrophy of the optic nerve. Argyll Robertson pupil, anisocoria, absence of the patellar and Achilles tendon reflexes, absence of ataxia, and frequently the presence of lancinating pains, paresthesias, trophic changes, and bladder troubles, should be designated as tabes juvenilis dependent on hereditary or acquired syphilis, and that it is the same as tabes of adults. Some of the sypmtoms, such as optic atrophy, are more common in the juvenile form, others, such as Romberg and ataxia, are more rare. Another difference is that among its victims the female sex decidedly preponderates.

March 20, 1913.

X Ray Treatment of Psoriasis vulgaris.—Leopold Freund recommends not to use the x rays in cases of the fresh eruption of psoriasis punctata, in which the disease is extending and involving new areas of the body, but to employ in this stage general baths, the application of sulphur, and the administration of arsenic, either internally or subcutaneously. Later, when new nodules no longer appear, and especially when dry, hard plaques are present which prove obstinate to every form of medicinal treatment and always recur in the same place, the indication is for the x ray treatment after a preliminary curettage.

March 27, 1913.

Stage of "Lymphoid Latency" in the Process of Infection with Tuberculosis.—Julius Bartel believes that it should be accepted as a newly discovered fact that it is possible for living tubercle bacilli capable of producing infection to remain latent in unchanged tissues, and that the necessary consequences may be deduced from this fact.

Combination of Adrenalin and Hypophysin and Its Clinical Utility.—B. A. Houssay says that the combination of adrenalin and hypophysin unites the intensive action of adrenalin upon the heart and bloodvessels with the protracted effect of hypophysin upon these organs. When these two

substances are properly mixed the depressive action of hypophysin is lessened. Four or five drops of a one to 1,000 solution of adrenalin with one c. c. of the "active constituents of the hypophysis," or of a twenty per cent. dilution of some of the other constituents of the posterior lobe, may be given intravenously in cases of shock and collapse. As adrenalin is rather poisonous and hypophysin is harmless it is possible to reduce the dose of adrenalin by this combination and yet increase its beneficial action. The combination may be used successfully in fulminating intoxications associated with lowered tension, in tachycardia, and in myocarditis toxica, either subcutaneously or by mouth. The combination produces a greater and more persistent local ischemia than adrenalin alone. The adrenalin neutralizes the powerful enterokinetic action of hypophysin. The active constituent of the posterior lobe of the hypophysis counteracts the mydriatic effect of adrenalin.

ZENTRALBLATT FÜR CHIRURGIE.

March 8, 1913.

Paresis of the Phrenic Nerve after Kulenkampff's Anesthetization of the Brachial Plexus.—R. Sievers reports a case in which anesthesia of the hand was produced by novocain injected into the brachial plexus above the clavicle. Pains appeared in the same side of the breast, increased in intensity, while breathing became more and more difficult. The respiratory murmur could hardly be heard behind over the right lung, and the x ray showed that the right half of the diaphragm scarcely moved. Recovery took place in four days.

ZENTRALBLATT FÜR GYNAKOLOGIE.

March 1, 1913.

The Serum of Normal Pregnant Women in Cases of Uncontrollable Vomiting of Pregnancy.—W. Rubeska reports two cases of uncontrollable vomiting of pregnancy in which he used the serum of normal pregnant women. One, a woman of thirty-one years, pregnant for the first time; the second, a woman of twenty-nine years, third pregnancy. The author concludes that such a serum is not a certain remedy against hyperemesis gravidarum.

March 8, 1913.

Pituitary Extract in the Treatment of Placenta prævia.—Piero Gall reports briefly ten cases of placenta prævia in which pituitary extract was used. He believes, as a result of his experience, that many infants are saved that would otherwise have been born dead; also that the danger to the mother from loss of blood and infection is decreased.

Action of Pituitary Extract.—F. Lieven reports a case in which a prolonged contraction of the uterus was caused by the injection of pituitary extract. As a result of this, the fetal heart sounds became very weak and slowed down to eighty-two. Forceps was applied and the child delivered. It was deeply cyanotic, but in the course of five minutes began to cry and revived completely.

March 15, 1913.

Treatment of Eclampsia by Injections into the Spinal Canal.—Guggisberg's two patients were injected with ten c. c. and five c. c., respectively, of a fifteen per cent. solution of magnesium sulphate. The first patient was admitted to the hospital in an unconscious state, eight hours after the beginning of the convulsions. Some six hours later she died. The autopsy showed general congestion and many areas of hemorrhage. The second patient lived a little more than two days after the attacks began and showed practically similar conditions at autopsy. In neither case was there any improvement after the spinal injection, and attack followed attack.

Interstitial Pregnancy.—Siefart's patient was admitted to his service with the symptoms of a ruptured extrauterine gestation sac. The patient was unconscious and pulseless and died within a few hours after the operation. At the autopsy it was found that the uterine end of the tube was funnel shaped and in this portion was the ruptured area involving the wall of the uterus.. Inside of the dilated portion was the placenta.

March 22, 1913.

Primary Sarcoma of the Small Intestine.—R. Patek briefly reviews such a case occurring in his practice. He calls attention to the difficulty of making a differential diagnosis between this condition and disease of the genitalia, particularly if, as in his patient, the growth is attached by adhesions to the internal organs.

Primary Cystosarcoma of the Stomach.—H. Koudring made a diagnosis of ovarian cyst, as no other point of origin could be determined. At operation it was found that the mass arose from the posterior side of the greater curvature of the stomach in the region of the fundus. Two smaller masses, about the size of a hen's egg, were present along the lesser curvature. From the large tumor 7.5 litres of a bloody fluid were removed.

March 29, 1913.

The Electrocardiogram in Pregnancy.—Rubner, in order to determine whether or not there is an hypertrophy of the heart during pregnancy, made use of the cardiogram in five cases. He found that an increase in the size of the heart takes place, but that it remains within physiological limits.

ZENTRALBLATT FÜR INNERE MEDIZIN

March 1, 1913.

Septichemia as a Frequent Complication of Other Infections.—N. T. Golubow maintains that not enough attention has been paid to "nonsurgical" sepsis grafted upon other infections. He has recently seen twenty such cases, seven ending fatally. In seven the throat was the port of entry of the septic infection, and in only two could the port of entry not be clearly distinguished. Many obscure conditions could be explained if these cases of mild sepsis were thoroughly studied.

March 15, 1913.

Quantitative Estimation of Small Amounts of Indol.—E. Herzfeld and J. Baur carefully compared the various methods of testing for and quantitatively estimating indol, and conclude that the most sensitive test is Ehrlich's p-dimethylaminobenzaldehyde reaction, which will reveal one part of indol in twenty millions, and is available for

quantitative work to a dilution of one in ten millions. The reaction is suitable for spectrophotometric estimations. Only upon employing 215 c. c. of blood could the authors detect a substance yielding feebly but distinctly a positive indol test. One hundred c. c. of urine and ten c. c. of feces gave more pronounced reactions.

LYON MÉDICAL.

March 16, 1913.

Bearing of Intestinal Involvement on the Operative Prognosis in Tuberculosis of the Uterine Annexa.—L. Desgouttes and R. Oliver assert that the prognosis in operated cases complicated with tuberculosis depends in large measure on disease of adjacent organs, especially the intestine. Lesions of the colon, its sigmoid flexure, and the rectum should be carefully buried at the operation, and, in particular, isolated from the general peritoneal cavity. Drainage should be instituted through the vagina. Where the small intestine is diseased, adhesions should be broken up only when it is absolutely necessary, i. e., when loops of ileum adhere to the annexa themselves. Even the smallest foci should be buried, as they are often much more serious than one would suppose. Infiltrated areas may also be removed by resection. Where this is impossible, anastomosis, and occasionally unilateral exclusion, may be required.

PRESSE MÉDICALE.

March 22, 1913.

Importance of Minimal (Diastolic) Pressure in Sphygmomanometric Measurements.—V. Pachon states that while the minimal (or diastolic) blood pressure has hitherto usually been estimated merely for the purpose of establishing the mean pressure, and chief stress has been laid, in general, on the systolic pressure, the minimal pressure is, in reality, the most valuable figure of all, constituting the logical starting point in all sphygmomanometric work. Not only does the maximal (or systolic) pressure apply merely to single, isolated points in the pressure curve, but it varies within wide limits and at short intervals in a given individual, from relatively trivial physiological causes, and in abnormal states may prove actually misleading, as, e. g., in decompensated cardiorenal patients, where the maximal pressure may be normal, and the minimal pressure alone, by its abnormal elevation, confirms the clincally observed circulatory fault. The minimal pressure represents both the true, constant load in the arterial tree and the resistance which the heart is obliged to overcome before its contents can be expelled—both data of fundamental importance from the clinical standpoint. The additional facts that the minimal pressure is far more constant than the maximal at different times in the same individual and in different individuals; that it is practically the same at all points in the arterial tree, while the maximal pressure drops progressively from aorta to periphery; and that it can be accurately estimated by the oscillometric method, all combine to render the minimal pressure the true initial point from which conditions of lowered or heightened arterial tension should be reckoned.

Local Agglutinins in Diagnosis of Tuberculosis.—L. Karwacki, having observed that only small amounts of tuberculous agglutinins were present in the blood serum, as compared to the larger and more constant quantities occurring in pleural exudates of tuberculous origin, has led to suspect that these agglutinins were elaborated, not in the blood, but in the disease foci themselves. He reports tests of the agglutinating power of tuberculous sputum, of pus from cases of surgical tuberculosis, and of urine from renal or vesical cases. In each series distinct and constant evidences of specific agglutinin formation were noted, as compared to control cases. In one instance, pus from a recent tuberculous abscess brought about agglutination in a dilution as high as one to 2,000. A positive reaction in dilutions less than one to ten is nonspecific in the case of sputum and pus, while with urine the limit is one to five. Karwacki concludes that whereas agglutination with blood serum merely shows a tuberculous subsoil, the local agglutinins always permit of definitely asserting that a tuberculous lesion is present.

Ozone in Glycosuric States.—D. Labbé and P. Pérochon report eight cases of glycosuria, for the most part diabetics, in which repeated inhalations of ozone appeared to reduce or arrest the elimination of sugar.

SEMAINE MÉDICALE.

March 26, 1913.

Clinical Forms and Diagnosis of Syphilitic Cerebellar Hemiplegia.—Pierre Marie and Charles Foix divided cases of syphilitic cerebellar hemiplegia into two main groups—those in which the lesion is strictly confined to the cerebellar tracts and those of the cerebellopyramidal type, in which the disease process encroaches on the pyramidal system. The latter variety occurs more frequently, and four of the five cases reported by the authors belong to it. It is subdivided as follows: 1. Homolateral cerebellopyramidal syndrome, with more or less complete oculomotor paralysis on the opposite side; 2, the same syndrome, with marked speech disturbances and no ocular paralysis; 3, the same, with associated evidences of thalamic disturbance. The diagnosis of syphilitic cerebellar hemiplegia is not difficult provided care is taken regularly to seek for the minor indications of a cerebellar lesion; even if only a few of these signs are noticed, and in moderate degree, disease of the cerebellar tracts should be considered present. Early and energetic mercurial and salvarsan treatment should be tried; it may prevent the development of fresh lesions.

REVUE DE CHIRURGIE

March, 1913.

Cancer of the Tongue in Young Individuals.—Gorse and Dupuich report a case of typical lingual epithelioma in a man, twenty-two years of age. The growth was removed surgically, but recurrence took place, the patient dying five months after the operation. The authors found recorded in literature only twenty-three cases of tongue cancer in individuals between twenty and thirty years of age and seven cases twenty years old or less. Whereas in the elderly the condition is much more frequent in the male sex, in the thirty cases collected by the authors in young subjects, twenty-two were fe-

males. As in the elderly, the site of the disease is usually the lateral margins of the tongue; there may be several foci of malignant change. Lymphatic involvement is often lacking. Two characteristic features are, more or less severe pain and retarded cachexia.

Surgical Manifestations of Inflammatory Tuberculosis.—G. Cotte and H. Alamartine discuss at length the surgical conditions arising through nonspecific activity of the tubercle bacillus, as reflected in the views of Poncet, who believes that in addition to ordinary tuberculosis with tuberculous lesions and giant cells there occurs another form in which nonspecific inflammation alone is produced. This form may involve any tissue or organ, but the most common manifestations are tuberculous arthralgia, acute, subacute, and chronic tuberculous rheumatism—the last either atrophic or hypertrophic—inflammatory tuberculosis of the serous bursæ and tendon sheaths, tuberculous osteomalacia and delayed rhachitis, many cases of Dupuytren's contraction, and keloids, as well as of mucomembranous enterocolitis, probably certain cases of appendicitis, inflammatory tumors of the stomach and colon, plastic induration of the corpora cavernosa, some cases of orchitis, hydrocele, and hematocele, kraurosis vulvæ, leucoplasia of the genitals, certain menstrual disturbances, hydrosalpinx, and uteroannexal infantilism. Tuberculous involvement of this nonspecific type may lead either to acute local congestions, to chronic sclerosing processes, or to the formation of tumor masses.

Occupational Aneurysm of Superficial Palmar Arch.—Regnault and Bourrut-Lacouture report the case of a gunner in the French navy in whom an aneurysm developed of the superficial palmar arch as the result of repeated forcible slapping of the breech of a gun in order to loosen the refractory breech block. The aneurysm, about the size of a hazelnut, was removed under local anesthesia with satisfactory results. The authors advise excision for all lesions of this kind, except where operation is refused, when compression may be tried.

Nutrition of Anesthetized and Operated Subjects.—E. Chauvin and S. N. Œconomos conclude from urinary analyses conducted on thirty-one patients, some operated upon under ether, others under chloroform, spinal and local anesthesia, that operative interventions, as ordinarily conducted, induce two forms of urinary disturbance: 1. A slight increase in the elimination of all nitrogenous products; 2, almost constantly an acidosis, generally very marked, manifested in an increase in the ammonia, total acidity and acetone, with circulation in the blood of a large amount of toxic substances. These disturbances occur whatever be the anesthetic used or the amount of it employed, except in cases of spinal anesthesia in which the patient is not dieted before operation. Most of them occur as the result of fasting alone, without anesthesia or operation; in fact, they are due in considerable measure to the limitation of food before and after operation, this factor being added to surgical shock and the anesthesia itself. The disturbances are in large measure prevented if the patient receives 150 grammes of glucose on the day before the operation and the three succeeding days. The following mode of administering the glucose proved acceptable to the patients: Tincture of nux vomica, 0.5 gramme; tincture of cinnamon, six grammes; glucose, 150 grammes; water, enough to make 300 grammes.

NOUVELLE ICONOGRAPHIE DE LA SALPÊTRIÈRE.
XXV. 5.

Syringomyelia; Hyperplasia of the Connective Tissue; Striated Muscle Fibres in the Spinal Cord.—André-Thomas and Quercy refer to recent advances in the pathology of syringomyelia, especially the hyperplasia of connective tissue associated with the gliosis, and report a case in which this process evidently played an important part in the rôle of cavity formation. The lower limit of the lesion extended to the second lumbar segment, but the upper limit was not determined, as the specimen obtained included only the fourth cervical segment. In addition to the gliosis, proliferation of connective tissue was present at all levels of the lesion; the bloodvesels throughout were very numerous with much thickened adventitia; and what was particularly curious and rare was the presence of striated muscle fibres in various spots between the fourth cervical and the eleventh dorsal segments. The authors believe that this is the first time that muscle fibres have been found in the spinal cord, and they ascribe the cause to defect in embryonic development.

Epilepsie tardive and Mental Disturbance Following Violent Cranial Traumatism.—Georges Petit records the history of a man who, at the age of twelve years, received a depressed fracture of the frontal bone. Eight years later convulsions first appeared and have occurred with increasing frequency for about thirty years. Progressive mental symptoms with terminal dementia have accompanied the process. In the absence of other apparent causal factors the cerebral traumatism is considered as the most probable origin of the epilepsy and dementia.

Vertebral Caries; Pott's Disease without Deformity.—J. Rotstadt presents a case which illustrates the extreme difficulty of diagnosticating vertebral caries when it compromises the spinal cord without causing any spinal deformity. In this patient, seventy-two years of age, during the last ten months of his life gradually developed symptoms of a lesion of the spinal cord at the level of the lower cervical segments, mainly weakness of the upper extremities, with muscular atrophy most marked in the intrinsic muscles of the left hand; weakness of the lower extremities with increased tendon reflexes; and ankle clonus and Babinski on the left side; impairment of sensation below the level of the distribution of the first dorsal segment at first having the character of syringomyelic dissociation, later involving all forms of sensation. The symptom of spontaneous pain appeared only about six months after the onset of the disease. This is remarkable, as early and severe pain is an almost constant manifestation of Pott's disease invading the spinal cord. At necropsy the lower cervical vertebræ were found to be necrotic, the dura greatly thickened, and the cord compressed but not invaded by infiltrations.

Spondylose rhizomélique.—Conto describes a case of spindylose rhizomélique with extreme deformity, and other points of interest as follows: The occurrence of the disease in a female, which is rare; the duration of the disease was more than fifty years (from the age of fifteen to sixty-six), and the progress was continuous during the entire period; the deformity was extreme, the sternum resting on the pubis, and the lower ribs were displaced by the crest of the ilium; during the first thirty years of the affection the process was confined to the spinal column, and during the last twenty years all of the articulations were involved by a process of ankylosing arthritis.

ROUSSKY VRATCH

February 9, 1913.

The Technic of the Wassermann Reaction; the Preservation of the Alexin of Guineapig Serum.—A. A. Melkich has found that the best and simplest method of preserving the alexins in serum is to add to the latter from six to eight per cent. of sodium chloride. The advantage of eight per cent. is that the mere addition of 100 times the quantity of water a normal salt solution is obtained. The serum may be kept at room temperature, and will preserve its properties for weeks.

Spontaneous Rupture of the Aorta.—A. D. Voloshin reports two cases of spontaneous rupture of the thoracic aorta. In one case, that of a healthy laborer, twenty-three years old, the rupture followed unusual exertion; in the other. a peasant, fifty-four ears old, there was a history of chronic alcoholism and syphilis.

Foreign Body in a Hernial Sac.—B. D. Stasoff operated on a left inguinascrotal hernia and found a needle in the sac. This needle had accidentally penetrated the abdomen six years before.

February 16, 1913.

The Direct Isolation of Koch's Bacilli from Tuberculous Tissues.—K. K. Vredensky employs the following method of direct isolation of tubercle bacilli from infected tissues: A small piece of tissue is removed with the usual aseptic precautions, placed in a Michel clamp, suspended on a previously sterilized silk thread, and immersed in five per cent. glycerin bouillon in a 100 or 200 c. c. Erlenmyer flask. The tissue is just under the surface of the medium, while the free end of the thread is secured by the cotton plug. The flask is then placed in a thermostat at 37° to 38° C. If at the end of three days the bouillon remains clear there has been no contamination. A very satisfactory growth is obtained in from one to two weeks.

The Treatment of Acute and Chronic Colitis with Tannic Acid and Bismuth.—D. M. Rossisky obtained very satisfactory results from tannismuth in the treatment of acute and chronic diarrheas of adults and children. The dose employed was from 0.1 to 0.5 gramme, several times daily. Immediate improvement followed the administration of this remedy.

Statistics and Etiology of Movable Kidneys.—J. T. Neishtab, basing his conclusions on observations in 329 cases, states that a movable kidney may frequently escape detection, owing to a concomitant affection which masks whatever symptoms may arise from the kidney. A movable kidney does not present pathognomonic symptoms, and, in the absence of any disturbance, requires no special attention. On the other hand, in some cases the condition is accompanied by marked nervous disturbances, and here a well fitting bandage may give relief. In some cases surgical intervention is indicated.

BRITISH MEDICAL JOURNAL.

April 5, 1913.

Cancer of the Tongue.—Charles Ryall examined a series of cases of cancer of the tongue with regard to the presence of syphilitic infection, and comes to the conclusion that there is an intimate causal relationship existing between the two diseases, since there was a history of syphilitic infection in eighty per cent. of the cancer cases. This contention is further borne out by the fact that lingual cancer is far more frequent in men than in women. The latter is the result of two factors, the greater frequency of syphilis and the more frequent presence of irritation through such habits as smoking. Ryall goes so far as to say that he would not hesitate to advise the excision of the tongue in a case of very extensive syphilitic lesion which remains uninfluenced by antisyphilitic remedies. In any case of lingual cancer he advises the total resection of the tongue, rather than the partial operation as frequently practised, on account of the fact that the disease is almost never confined to one lateral half of the organ.

Distilled Water versus Salvarsan in the Treatment of Syphilis.—G. Arbour Stephens was led to the trial of this treatment as a result of his observations on the influence of variation in surface tensions. He says that the value of mercury in the colloidal form as an antiseptic rests on its possessing the powers of both classes of antiseptics—the power of the heavy metals to combine with protein matter, and the power to modify the surface tension of all living cells. In some experiments made to determine the surface tension of individual substances it was found that coloidal mercury, as well as mercury perchloride and phenol, have a tendency to reduce the surface tension existing between mercury and potassium chloride, and that the fall is not complete at once, but is progressive. This is important, for, with such a varying degree of tension around living cells, the latter find it difficult to accommodate themselves to their surroundings, as, as the result of their failure to do this, their lives cease. The addition of boiled yeast to living yeast in a suitable medium stimulates the living yeast to marked activity, to a rapid life, and therefore to an early death. Similar increase of activity is seen in the case of the addition of boiled bacteria to cultures of living ones. Both of these phenomena are due to changes in the surface tension, which is in the nature of a lowering. This lowering of the surface tension is associated with a more rapid production of catalytic products in the cells. The injection of vaccines is associated with the production of antibodies. Therefore it seems justifiable to infer that the production of antibodies is closely associated with a reduction of the surface tension. In disease, rapid catalytic

changes and rapid production of antibodies are interdependent. If one can induce such marked catalytic changes with or without a vaccine, there is a chance of liberating useful and remedial antibodies. In chronic disease the absence of a sufficient number of antibodies seems to be the cause of the continuation of the disease. In the absence of any vaccine to induce catalysis and increase the antibodies, the injection of distilled water was thought of. Stephens reports the results of such injections into a number of different cases and seems to have obtained good results, particularly in the case of syphilis.

LANCET.

April 5, 1913.

Nonparasitic Cysts of the Liver.—Sidney Boyd gives an excellent review of the pathology of the reported cases, some thirty-four in number, and offers some speculations as to the probable etiology of the different forms. The principal clinical features of the solitary cysts follows: Eighty-six per cent. of the reported cases were in the female sex, which is in agreement with the suggested congenital origin, as developmental defects are more common among females than among males. The youngest case was eighteen months old and the oldest seventy-five years, but in one instance the liver was known to be enlarged at birth. The signs and most part upon the size and location of the cyst. An abdominal swelling was diagnosticated as a cyst in An abdominal swelling was diagnosed as a cyst in most cases, and was present in all. Fluctuation was usually readily obtained, and it is characteristic of this form of cyst that it is of low tension. These cysts almost always progress rapidly and, if neglected, death will result in the same way as from ovarian cyst. The prognosis is not unfavorable if the condition can be operated on. Frequently, in the cases of apparent solitary cyst, there are smaller cysts, some of which may subsequently take on growth. Simple puncture should not be performed, as it has often been fatal.

The Pathology of Tuberculosis in Infancy and Childhood.—C. P. Lapage and William Mair report their findings in the post mortem examination of 150 infants or children in whom microscopic evidence of tuberculosis was present. Of this 150, there was glandular involvement in eighty-nine per cent., seventeen per cent. showing glandular tuberculosis alone. Pulmonary tuberculosis was present in fifty-four per cent., unaccompanied by other tuberculous lesion in fourteen per cent. Intestinal and peritoneal tuberculosis was found in forty-nine per cent., peritoneal disease alone in twelve per cent., and intestinal alone in three per cent. Marked general tuberculosis was found in forty-four per cent. The detailed study of the cases shows that either the bronchial or mesenteric lymphatic glands may be diseased without there being a lesion of the area drained by them. This occurred in twenty-eight per cent. of the cases with thoracic gland involvement, and in thirty-two per cent. with mesenteric gland involvement. From this it appears probable that the disease may spread from the abdominal to the thoracic glands, and *vice versa*. The disease may be spread, too, by the blood stream, and the bacilli may also pass through a healthy or very slightly damaged mucous membrane without its infection. There were twenty-five cases of chronic pulmonary tuberculosis with cavitation, and in all of these, including three infants under two years of age, the lesion was apical. In the total series the abdominal glands were more often affected than the thoracic in the ratio of seventy-one to fifty-five, and the most common condition of all was that in which both groups were simultaneously involved.

The Technic of Excision of Cervical Ribs.—A. S. Blundell Bankart makes an incision about four inches long parallel to, and about an inch from, the spinous processes of the vertebræ, with its centre opposite to the seventh cervical. The trapezius is divided in the same line and retracted outward, to expose the deep muscles. The outer margin of the deep spinal muscles leads directly to the transverse processes, and so to the origin of the cervical rib. The rib is divided at once close to the vertebra, and, being then movable, can be dissected easily from the soft parts without danger of their injury. The trapezius is then sutured with catgut, and the wound closed without drainage. The operation is almost bloodless.

JOURNAL OF LARYNGOLOGY, RHINOLOGY, AND OTOLOGY.

March, 1913.

Dental Aspects of Rhinology.—J. H. Gibbs emphasizes the importance of efficient mastication during early childhood for the proper development of the jaws and accessory parts, as well as for the prevention of dental disease in later life. The milk teeth should be used by chewing. In addition to the diet made up largely of milk, such articles as a smooth ended chop or chicken bone should be given the child to chew. Dry crusts, toast, or rusk, well buttered, may also be given. Unable to swallow these in the dry state, the child chews them, thus exercising the jaws and causing a sufficient secretion of saliva. The milk is given separately. This method is vastly preferable to giving the child food sodden in milk or gravy, such as soft porridge deluged with milk. A useful test for determining whether the tooth pulp is living or not is the temperature test. For it a small metal instrument is heated and applied to the crown of the tooth, or to a metal filling, if one be present. If the tooth pulp is alive, momentary pain will be felt on applying the heat. Cold may be applied by dipping a tightly rolled pledget of wool into some very volatile substance, like ether or ethyl chloride, and applying to the crown of the tooth. A positive result is conclusive, but a negative one is not.

BOSTON MEDICAL AND SURGICAL JOURNAL.

April 10, 1913.

The Conduct of Labor without Vaginal Examinations.—Charles M. Green maintains that the common custom of making frequent vaginal examinations during labor is a bad one and deserves to be classed as meddlesome, for these examinations disturb and often hurt the patient, they add to the risk of infection, and they give no information that cannot generally be obtained by external examination, except as to the condition of

the cervix and the possibility of prolapse of the cord or of a fetal extremity. The great majority of cases are normal, so far as the fetal passenger and the maternal passages are concerned, and when delay occurs it is generally due to defective pains, which are not remedied by these examinations. Medical students should be trained to make vaginal examinations, in order to make them with accuracy when occasion requires. They should also be well trained in the external examination. They should then be instructed never to make a vaginal examination without a definitely necessary indication, and should be led clearly to appreciate the fact that the infrequency with which they explore the vagina in normal labor affords an excellent criterion both of skill in the external examination and of clinical knowledge and acumen in the practice of obstetrics.

Diabetes in Infancy and Childhood.—John Lovett Morse says that the etiology of diabetes in childhood is essentially the same as in later life. The predisposition of the Jewish race, however, is not as evident. Heredity is an important factor, but perhaps less so than in later life. It may be direct or indirect. The symptoms are, in the main, the same as in adults—polyuria, polydypsia, emaciation, and constipation. Polyphagia is perhaps more common. Symptoms of gastric disturbances are said to be more common. Disturbances of the skin, eye, and nervous system are less frequent. Marked changes in disposition are very common, the child often becoming quiet, morose, and sad. Enuresis is often the first symptom to call attention to the trouble, in other cases the first thing noticed is the presence of flecks of sugar on the clothing, vessel, or floor. Another early and suspicious symptom is irritation of the external genitals. The onset is usually described as acute in childhood, but is probably less often so than is ordinarily supposed, because what is taken for the onset is not infrequently the change from the mild to the severe type of the disease. The prognosis in childhood is almost uniformly bad. The treatment is the same as in later life, regulation of the diet. The carbohydrates are to be cut down as low as possible without bringing on an acid intoxication, and the calories lost in this way are to be made up by increasing the amount of fat and proteid in the diet. This is no more difficult in children over four or five years old than in adults, but in younger children it is difficult to give enough fat and proteids to cover the caloric needs, and in infants not old enough to eat meat and eggs, it is almost impossible. Drugs are of no use in the treatment of diabetes in children, except for the alleviation of symptoms.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

April 12, 1913.

The Purity of Commercial Sodium Salicylate.—W. S. Hilpert observes that while certain manufacturers emphasize the superiority of sodium salicylate made from oil of wintergreen or oil of birch, examination of the various pharmacopeias discloses the fact that in citing the requirements for sodium salicylate no stipulation or reference is made as to its origin. In a careful and exhaustive study of this subject by the writer and others, the conclusion is reached that the cheapest commercial synthetic sodium salicylate is the equal of the higher priced brands of the synthetic kind of the costly "natural" product.

The Wassermann Reaction in Diabetes mellitus, with Special Reference to Its Relation to Acidosis.—The study of seven cases in this connection by John H. Richards reveals some interesting facts. Four cases of diabetes with marked acidosis gave positive Wassermann reactions which were unaffected by antisyphilitic treatment. Two cases of diabetes in which the urine showed no acetone bodies in one, and only a slight amount of acetone in the other, gave negative Wassermann reactions. One case of nondiabetic acetonuria, with an absence of diacetic acid and of betaoxybutyric acid, gave a negative Wassermann reaction. Syphilis was not an etiological factor in any of the cases studied. From a study of the cases in the first group, it is evident that a positive Wassermann reaction is not indicative of syphilis in cases of diabetic acidosis. The cases in the second group prove that diabetic glycosuria, in the absence of acidosis, does not, in these cases at least, cause a nonspecific positive Wassermann reaction. The case in the third group shows that nondiabetic acetonuria, with an absence of diacetic and betaoxybutyric acids, does not result in a positive Wassermann reaction in nonspecific cases. Will nonspecific cases with marked acidosis of nondiabetic origin show positive Wassermann reactions, and what proportion of diabetic acidosis will show positive reactions?

Sporotrichum Schenckii.—It is interesting to note, says Kenneth Taylor, the widespread opinion that many of the refractory cutaneous lesions diagnosticated as syphilitic and tuberculous are due to infection with the sporothrix. Reports of human cases of pharyngitis due to this organism and the involvement of nearly every organ in some of the experimental animals would seem to show that its work is not confined to the superficial abscesses usually caused by it in the human subject. The organism can usually be secured by curettement and cultivated on artificial media, but is demonstrated with difficulty in the direct perforations in which only the spores have been seen. In the study of this organism the writer observed many interesting points. The spores of the organism were attached to the mycelia by short pedicles. So called chlamydospores were of frequent occurrence. Spores, similar in form to those grown on blood serum, could usually be demonstrated in paraffin sections of the tissue lesions, and shown in most cases in direct preparations from the abscesses. It appeared, in one case, that mycelial growth took place in the necrotic tissue at the centre of a large abscess caused by the organism. The best stain for the organism grown on artificial media, is methylthionin, for its demonstration in the tissues Gram's stain is the most satisfactory. After six weeks' growth at room temperature the organism failed to liquefy gelatin. After two weeks' growth, at room temperature, milk was coagulated. While there is insufficient basis for any definite statement, there is suggested by the writer's observations a

hint of the possibility of producing immunity in animals by previous injection of small doses of pure culture.

Pyelotomy for the Removal of Renal Calculi.—After a careful study of renal calculi, Daniel N. Eisendrath is convinced that pyelotomy is the simplest and least serious method for the removal of calculi lodged at the junction of the ureter and renal pelvis, or for small or moderately large calculi, either free in the ampullary type of pelvis or in a primary calix of a bifid or trifid type of pelvis. It is also rapidly becoming the method of choice for small calculi lodged in the calices of the ampullary type of pelvis. Transverse or vertical incisions into the parenchyma may be combined with pyelotomy for the removal of larger calculi. For calculi in one pelvis or both pelves of a horseshoe kidney, as well as in bilateral cases, it is the best method, especially when complicated by anuria. There is less to fear from hemorrhage either during or after pyelotomy than in nephrotomy. The chance of overlooking a calculus is lessened through bimanual palpation of the pelvis and parenchyma. Pyelotomy can be more rapidly done, and the period of convalescence is much shorter (seldom more than from ten to fourteen days) than in nephrotomy. Pyelotomy is, however, contraindicated when the kidney is fixed by adhesions or the pedicle is short or if extensive infection be present.

MEDICAL RECORD.

April 12, 1913.

Peritoneal Adhesions of the Insidious Toxic Group.—All of the civilized nations, according to Robert T. Morris, are now undergoing decline, with various degrees of rapidity, as witnessed by the arrested development of the ductless glands and of other protective organs, in connection with other stigmata of physical decadence, which results in a loss of normal protective efficiency against the toxines which are thrown into the circulation in excess. These toxines are imperfectly metabolized, and cause harm directly or indirectly through the proteolytic changes induced by their presence. In this way various peritoneal adhesions, slowly developed, seem to take their origin from toxic irritation of the endothelial cells. This toxic impression is intensified by the colonic stasis, which is favored by the relaxation of peritoneal supports, common to quite a large number of persons at the present day. In these cases of colonic stasis radiography is necessary to show the position of the colon and stomach, and to determine if colonic stasis is due to interference with motility, through abnormal positions of the abdominal viscera, or to peritoneal adhesions, and whether surgery will remedy the conditions present. The operation of choice, which is done with ease and rapidity, exposing the patient to very slight shock, and which places the patient in a way to make him readily amenable to subsequent treatment against intestinal putrefaction and fermentation, consists in a simple short circuiting of the colon. The ileum or cecum is placed against some convenient portion of the sigmoid colon, and the two structures, held temporarily by traction sutures, are quickly united in such a way that four or five feet of the offending colon are thrown out of commission. While sufficient room is left for fecal storage, the useless area of the colon no longer turns into the circulation a harmful flood of toxines.

A Few Interesting Cases of Bone Lesions.—Walter W. Griffin points out the very material aid of x ray pictures in the differential diagnosis of bone lesions and the fact that in obscure cases the more radical method of sectioning for diagnosis is thereby obviated; proving his point by the presentation of the history of four illustrative cases. In the diagnosis of doubtful cases the writer would have us remember the value of the x ray, the Wassermann reaction, and pathological section. An x ray showing a bone which is "mouse gnawed" is highly suggestive of specific disease. Bone plates should be removed after bony union has been effected, since they act as foreign bodies and cause irritation by their mere presence. Though not strictly scientific, a therapeutic application of the "mixed treatment" is harmless and will often clear up a suspected syphilitic diagnosis.

The Pathology and Treatment of Callous Ulcer of the Bladder.—Leo Buerger reports in detail two cases of callous ulcer of the bladder in which by simple excision of the ulcers with a punch forceps, through the operating cystoscope, the patients, who had suffered most intense vesical symptoms for more than a year, were completely cured. The study of these cases clinically, cystoscopically, and pathologically, has conclusively shown that simple callous ulcer of the bladder can and does exist; the clinical symptoms being intense dysuria, urgency and frequency of micturition, with bloody and purulent urine. These manifestations become progressively more marked and take a chronic course; which argues that chronic cystitis and contracted bladder are often the sequelæ of solitary ulceration. The favorite site of this chronic ulcer is in the region of the trigone. Although they are usually simple and solitary, there may be one or more erosions elsewhere, secondary to the intense cystitis excited by the ulcer. Excision of the ulcer is the most effective and rapid method of cure; other methods (actual cautery, fulguration, silver nitrate irrigations) are useless. The margin of the ulcer shows an intensely inflamed mucosa and submucosa, there being a superficial deposit of urinary salts, a layer of necrosis and ulceration and a stratum of newly formed connective tissue in a stage of active inflammation. Careful search for this form of ulcer should be made in every case of chronic cystitis, especially in women, as the cystitis may be secondary to it.

AMERICAN JOURNAL OF INSANITY.

January, 1913.

Three Quarters of a Century of Institutional Care of the Insane in the United States.—Henry M. Hurd contributes an interesting account of the development of institutional treatment of insanity in this country. He divides this development into four distinct periods: First, the period of neglect lasting from the settlement of the country practically until the opening of the Utica State Hospital in 1843; second, the era of awakening which resulted in the establishment of institutions for the insane in nearly all of the eastern and central

States; third, the period of State care, beginning about the year 1850, when State provision for the insane in the United States first began to be considered to be a matter of State duty; and fourth, the period of scientific care, or the present era, when the care and treatment of the insane includes the study of mental diseases, their causes and development, laboratory investigations, and methods of prevention.

Occupation for the Insane.—C. Floyd Haviland considers occupation to be the most powerful single means at our command in curative treatment of insanity. While it is not a new method, "it is only in recent years that industrial and educational work has assumed a proper relationship with other institutional activities, none of which can be regarded as more important." The application of this method of treatment requires systematized plans of work under medical supervision and should be adapted to the individual patient's capacity and accompanied by recreation.

Nature of Metastatic Tumors of the Thyroid.—Adolph Meyer describes a case of tumor of the thyroid gland with metastases in the skull, femur, and of the bronchial and inguial glands. The tumor of the thyroid was not infiltrating, and presented a condition of adenocarcinosis with central fibrosis and partial calcification. That of the skull was limited between the endothelium of the dura and the external periosteum and presented uneven hyperostoses on the inside and fishbonelike processes into the elevated periosteum, it showed to a great extent normal thyroid structure. The tumor of the femur was distinctly infiltrating, and that as well as those of the involving the lymph glands have the type of adenomacarcinoma and normal thyroid tissue. The specimens show clearly the peculiar tendency of the thyroid gland to take up its normal appearance in its metastasis according to the opportunities of the soil. It is also interesting to note that the patient did not exhibit very marked symptoms of hyperthyroidism.

Pellagra in Maine; Recent Work on the Etiology of the Disease.—Henry W. Miller reports what he believes to be the first case of pellagra originating in Maine, and contests the theory that maize is the cause of this disease. The case described was fairly typical with the exception that diarrhea did not develop at any time, but, on the contrary, there was a tendency to constipation. The terminal dementia simulated that of dementia præcox. In reviewing the recent work on the etiology of pellagra attention is particularly directed to the theory of Sambon, who believes that it is caused by a protozoal parasite, probably transmitted by some blood sucking insect, probably a sandfly. Against the maize theory the contentions are made that pellagra is found where corn is neither cultivated nor eaten; that it is absent from many places where corn is the staple food; and that since the maize theory was first proposed no one has been able to prove it.

Heredity in Epilepsy.—Everett Flood and Marion Collins have made a careful and extensive study of the pedigrees of seventy-eight patients at the Monson State Hospital with the view of determining any hereditary factors in the production of epilepsy. The results of the authors' work so far indicate that alcoholism in the parents is not a cause of epilepsy in the children, although epilepsy and alcoholism are often associated. Feeble mindedness and epilepsy are also associated, and there is some evidence that both are caused by the same defect. Definite laws of heredity as a cause of epilepsy cannot as yet be formulated, but in a large proportion of cases there is some nervous defect on both sides of the family such as epilepsy, feeble mindedness, insanity, migraine, alcoholism, sexual immorality, and lack of moral sense.

JOURNAL OF MEDICAL RESEARCH.

March, 1913.

Relation of the Bordet-Gengou Bacillus to the Lesion of Pertussis.—Mallory, Hornor, and Henderson have been able, with sputum and with pure cultures of a microorganism corresponding in every way with the Bordet-Gengou bacillus, to produce the characteristic lesion in young animals and in four instances (one puppy and three young rabbits) to obtain the organism again in pure culture. They also have produced the same lesion in the nares, trachea, and bronchi of a young rabbit after infecting it through the nares with a subculture of the bacillus obtained originally from Bordet, and were able to grow the microorganism again in pure culture. They have, therefore, supplied the steps which have heretofore been lacking, according to Koch's laws, for the complete demonstration that the Bordet-Gengou bacillus is the cause of whooping cough.

Meningitis in an Infant Caused by the Typhoid Bacillus.—Lyall reports a case of purulent meningitis in a child, five and one half months old. An organism corresponding to *Bacillus typhosus* in its morphology, cultural characteristics, and biochemical reactions, was isolated from the spinal fluid and also from the nose before death. It also was obtained in pure culture from the brain, cord, spleen, and heart's blood at autopsy. The important point is that the usual pathological lesions characteristic of typhoid fever were absent.

Nature of Anaphylaxis and Relations between Anaphylaxis and Immunity.—Weil gives an interesting presentation of the question and discusses the two chief theories, first, that the anaphylactic reaction is intracellular; second, that the reaction is entirely humoral. Although the latter is the more popular, Weil reports experiments that tend to discredit it. He concludes that anaphylaxis is due to the reaction between specific antibodies present in the cells and the introduced antigen. In passive sensitization the body cells absorb the introduced antibodies from the blood, and the animal is thus made anaphylactic. The function of immune bodies present in the serum is to neutralize the introduced antigen, and so to protect the body cells. The anaphylactic animal, however, regularly contains in his circulation an insufficient quantity of antibodies to protect his body cells. The immunized animal is potentially anaphylactic; his body cells possess anchored immune bodies, but are protected by those in the circulation. Consequently,

exactly the same antibodies are present in anaphylaxis as in immunity. In the former they predominate in the cells; in the latter, in the serum.

The Leucocytic Inclusions of Döhlé.—Cummins reviews the work of Döhlé and others who, upon examining the blood smears from cases of scarlet fever, found within the cytoplasm of the neutrophilic polynuclears, multiform bodies staining somewhat less darkly than the nuclei. Cummins made 155 examinations of ninety-five febrile and twenty-six afebrile cases, seventeen normal individuals, and sixteen laboratory animals. Fifteen of these cases were scarlet fever. It appears that the so called inclusion bodies are to be found in practically all febrile diseases, in pyogenic conditions (chronic) of afebrile character, in severe injuries without febrile disturbance, and in some normal individuals, but are apparently absent in laboratory animals. A nuclear origin seems probable. The alleged specificity to scarlet fever has not been corroborated.

Proceedings of Societies.

WESTERN SURGICAL ASSOCIATION.

Twenty-second Annual Meeting, Held at Cincinnati, Ohio, December 20 and 21, 1912.

The President, Dr. L. L. McARTHUR, Chicago, in the Chair.

(*Concluded from page 848.*)

Osteitis Fibrosa Cystica.—Dr. JAMES F. PERCY, of Galesburg, Illinois, reported a case, with lantern demonstration, in which he had operated, and reviewed the literature. He said the course of the disease was persistently chronic. The osteoporosis, due to the perseveringly destructive action of the osteoclastic cells, weakened the bony framework to the point of deformity, suffering, and uselessness. It was this that explained the infrequency of pathological fracture which, according to Pfeiffer, occurred twenty times in his report of forty-nine cases. Curiously, this author (Pfeiffer) advised against operative measures because the disease was essentially not malignant. He would use the knife only for the purpose of diagnosis or where the pain was excessive. Boit, however, insisted upon radical treatment.

The case reported by the author had been greatly relieved by the operative procedures followed. The pain had disappeared and the sense of insecurity and weakness in and about the hip had disappeared. The deformity had not been overcome, but this could be left to subsequent surgical treatment if it seemed wise to attempt it. The most important problem was the method to be pursued in this case where the iliac bone, especially the right, was so extensively involved. This question must also arise when the disease occurred in the small bones of the foot and hand or in the skull. It was necessary to remember that the disease always involved the endosteum and not the periosteum, and this fundamental pathological fact must be the basis of interference to arrest the destructive process.

The indications for operation could safely be enumerated as follows: 1. Interference with function and the development of deformity. 2. Pressure upon important vessels, nerves, and organs. 3. Prevention of pathological fracture from a large osteoporosis resulting from the disease. When the pernicious character of the pathology was considered, especially in relation to the ruinous work of the osteoclastic cells, a permanent recovery could be obtained in no other way than by radical operation.

Ventral Tumors of the Sacrum.—Dr. ARTHUR AVER LAW, of Minneapolis, after discussing the embryology of these growths, reviewing the literature, and reporting a case, presented the following summary and conclusions: The large tumor showed a loose, rapidly growing connective tissue stroma in which were nests of embryonic cells growing in syncytial masses and suggesting malignancy in their manner of growth and appearance. Areas of hemorrhage, necrosis, and calcareous degeneration demonstrated the atypical character of the tissue, its rapid development, and imperfect blood supply.

The smaller tumor suggested a neuroma in its general characteristics, although neuroglia fibrils had not yet been demonstrated. That the tumor sprang from some misplaced remnants of the terminal portions of the neural tube seemed a logical conclusion. That portions of it had developed abnormal powers of proliferation and showed signs of malignancy change, while other portions had in an imperfect manner reproduced the adult type of nerve tissue, was the only explanation which apparently explained these rather widely diversified tumor masses.

What Pathological Conditions can the Gallbladder Have and Still Function?—Dr. B. B. DAVIS, of Omaha, pointed out that certain conditions found often at operation were bound to destroy normal function for all time. Undue narrowing of complete obliteration of the lumen of the cystic duct made a continuation of the function of the gallbladder impossible. If the obstruction was incomplete, bile would slowly flow in, but the process of emptying was so retarded that stagnation, which always invited infection, was sure to occur sooner or later.

Although safe and efficient delivery of the bile through the hepatic and common ducts into the duodenum could be carried on by the other forces without its aid, it could be done more effectually and with less liability to damming up of the current when accelerated by a perfectly functioning gallbladder. He would, therefore, be the last to recommend the indiscriminate removal of this organ. It ought never to be done unless it was so badly damaged that its function would be permanently lost. When one met with so many patients whose gallbladders had been drained, but who were not cured, there seemed to be something still to be said. The fact stood out that drainage operations were not followed by the uniformly good results that ought to be obtained. Patients too often felt a regret that they had not kept away from the surgeons. It was his opinion that many of the unfavorable results might be avoided by a more thoughtful consideration of the capacity of the gallbladder with which one was dealing to carry on its functions.

Dr. CHARLES H. MAYO, of Rochester, Minnesota, said that very often they took out the gallbladder when they should leave it. When a patient complained afterward and came back for a secondary operation, he said the gallbladder ought to have been removed in the first operation. In about one half of such cases they would find the gallbladder ought to have been removed primarily. In the other half they would find an enormous mass of adhesions; they would find the duodenum adherent to the liver and scarred; the pylorus adherent to the gallbladder and margin of the liver. They would say, they wished they had done something to prevent those adhesions, not thinking at the time that those were the adhesions that made secondary symptoms; that that particular gallbladder was not diseased, but that adhesions occurred on account of bad surgery and of not utilizing fat, as suggested by their president (Doctor McArthur) in his address, to prevent them.

Pyelotomy for the Removal of Renal Calculi.—Dr. DANIEL N. EISENDRATH, of Chicago, said the method of exposure and of bringing the kidney into the wound did not differ in any manner from that employed for nephrotomy. In order to perform a pyelotomy, one must be able to lay the kidney completely on its anterior surface to be able to gain access to the posterior aspect of the renal pelvis without much tension on the renal vessels. If the pedicle was short, or there was much fixation of the kidney by adhesions, pyelotomy was out of the question, and too much traction under such conditions would surely result in disaster. In the majority of cases, however, pyelotomy was possible if the incision was not too small and the wound edges were well retracted. Through the pyelotomy incision one could introduce the index finger and palpate the entire interior of the pelvis. The extraction of the calculi lying loose in an ampulla or one of the main divisions of a bifid pelvis was very simple.

The advantages of pyelotomy were: 1. It was the simplest and least serious method for the removal of calculi lodged at the junction of the ureter and renal pelvis, or

for small or moderately large calculi, either free in the ampullary type of pelvis or in a primary calyx of a bifid or trifid type of pelvis. 2. It was the best method for calculi in one or both pelvis of a horseshoe kidney, as well as in bilateral cases, especially in those complicated by anuria. 3. Hemorrhage was far less likely to occur either during or after pyelotomy than in nephrotomy. 4. Bimanual palpation of the pelvis and parenchyma lessened the chance of overlooking a calculus. 5. Pyelotomy could be much more rapidly done, and the period of convalescence was much shorter than in nephrotomy. It was seldom more than ten to fourteen days, in his experience.

The disadvantages of pyelotomy were: 1. Pyelotomy was contraindicated when the kidney was fixed by adhesions or the pedicle was short, or if extensive infection was present. 2. A fistula might persist after operation. 3. The danger of bleeding either during or after operation from the circumpelvic vessels, although slight, must always be borne in mind. Pyelotomy was destined to become an active competitor with nephrectomy in the majority of cases.

Dr. William Jepson, of Sioux City, Iowa, said that nine years ago he nearly lost a patient from continuous hemorrhage, which began some eight or nine days after nephrotomy. The hemorrhage ceased from time to time, but reappeared, until it was five or six weeks before danger was passed and his fear was allayed. This was followed a year and a half afterward by another patient, a young man, who died. He had never done a nephrotomy since that time for the purpose of removing a calculus in the kidney. He immediately perfected himself in the technic of operating through the pelvis itself for the removal of stone from the ureter or kidney, if accessible.

Dr. A. W. Abbott, of Minneapolis, said that one of the greatest arguments in favor of the position taken by the essayist was the irreparable damage done to the kidney by any incision into it. If we incised it, we had to sew it up. It had been shown that the injury by the connective tissue formation after incision and fatty degeneration that followed, also the same process that took place after suture of the kidney, would make it inadvisable to cut the kidney unless we had to.

Observations on the Radical Cure of Inguinal Hernia.—Dr. William Hessert, of Chicago, said our choice of operative technic should be determined by the anatomical findings. We had all seen cases in which it would have been impossible to perform a typical Bassini operation. Owing to the absence of the rectus, the former could not be brought down to Poupart's ligament without creating too much tension. Either the muscle would tear at once or necrosis would occur later. Attention had been called to the fact that this inner portion of the canal should be especially fortified against recurrence.

The technic which was best adapted to meet the requirements of these cases was the imbrication modification of Andrews. By bringing down to Poupart's ligament the edge of the fascia of the external oblique and as much of the muscle as possible, a very firm covering for this weak area was secured; this weak area was further fortified by the overlapping of the lower flap of fascia. In cases where the triangle was especially large, good technic would be found of service. By incising the edge of the rectus sheath, the fibres were exposed and a portion of the muscle could be brought down and sutured to Poupart's ligament, thus supplanting the conjoined tendon which was absent. The operation could be completed by following the Andrews technic.

His conclusions were: 1. The conjoined tendon was deficient or absent more commonly than had been generally taught. 2. This anomaly supplied an important predisposing factor in the development of direct hernias, and probably played a certain rôle, though a minor one, in the etiology of oblique hernias. 3. The presence of this defect precluded the performance of the Bassini operation as a routine measure, except in children. 4. The Andrews imbrication method had fulfilled the indications regardless whether the tendon was present or absent. The Bloodgood transposition of the rectus was an excellent aid when required.

Dr. C. M. Nicholson, of St. Louis, Missouri, stated that in probably five cases out of ten that had come under his observation of hernia there had been a separation of the aponeurosis of the external oblique, and the intercolumnar fibres could be seen plainly a distance of an inch and a half. Every one who had dealt with inguinal hernia had noticed this. If the trouble was due in a large percentage of cases to the absence of any structure, it seemed surprising that clinically we got such excellent results by doing some modification of the Bassini operation, probably infolding in accordance with Ferguson's suggestion. He felt very sure in something over five hundred herniotomies, not strangulated or complicated, but simple hernias, he had seen but three recurrences, and these were all due to a condition other than that described by the essayist. All three were in children and were due to a lack of development of the external oblique muscle. He had therefore come to the conclusion that the cause of hernia was not due to a preformed sac, except in that variety of hernia which was congenital, that is, irrespective of the time it formed.

Dr. A. E. Benjamin, of Minneapolis, thought the essayist was right in his conclusion that the conjoined tendon was very often absent. It had been his practice in these cases to transplant the fat; after tying it off he passed it back of the transversalis and brought it up high, so as to have the intraabdominal pressure in the sac after that come against the transversalis muscle. In that way, we took off the strain, but the fibres of the transversalis and internal oblique he had brought underneath Poupart's ligament with modified Halsted mattress suture, bringing that out through the skin. This frequently was done because at the time he first improved the operation he did not have suitable catgut or suture material which he could rely on. At the present time this did not obtain.

Dr. F. Gregory Connell, of Oshkosh, Wisconsin, agreed as to the necessity of operating on the other side where there was a slight bulging, even though there was no demonstrable hernia, as he had had the same experience as others of subsequent hernia following the repair of the side where it had developed. He had met with the absence of the conjoined tendon. In these cases there was a direct hernia of the deep epigastric vessels formed under the internal margin; the internal ring, while not bulging, was below. We might call it a ventral hernia rather than inguinal, as it was not inguinal in the strict sense of the word in that it did not come through the inguinal canal.

Dr. M. L. Harris, of Chicago, stated that as the result of personal observations, he was fully convinced that all hernias that developed in the active period of life were congenital in origin. By this he meant they were due to congenital defects. He would exclude the hernias—the simple hernias—that developed in the aged, coming at a period of life when there was general atrophy and wasting of the tissues, as in old people with chronic bronchitis, emphysema, enlarged prostates, etc. Every hernia developing in the inguinal region during the active period of life had its origin in a congenital defect.

The absence of the conjoined tendon was a material factor in the causation of hernias, as was pointed out in an article which appeared two years ago in Russia. It was discovered that during the last Russian war an unusually large number of the conscripts constantly appeared with ruptures, who were otherwise healthy young men, who ought to be sent and were capable of going into service, but who escaped by reason of having ruptures. The authorities investigated the matter and after getting confessions from some of the subjects, it was discovered there was a regular place where these young men went and had these hernias produced, and they were produced by a young doctor who had discovered that by passing his finger up into the external ring and forcibly tearing the conjoined tendon from its insertion, these young men would all have hernias within a short time. That demonstrated clearly the influence of the conjoined tendon in producing hernia.

Dr. Daniel N. Eisendrath, of Chicago, said that his observation of this class of cases had taught him that it was possible to make a diagnosis before operation, so he made it a rule to ask the patient to let him operate on both sides, even though on the other side no hernia had appeared, because sooner or later a hernia would appear on the other side, and the patient might feel that there had been some negligence on the part of the surgeon in having operated on one side only, because he could not associate that with the fact that he had continually weak muscles there. In addition to the fact oftentimes of lack of development of the conjoined tendon or atrophy of the fibres of the internal oblique, this condition was found when the conjoined tendon was fairly well developed. It was found in stout

individuals who had attenuated oblique muscles, where there was practically only white muscle and lying between the white fibres we found quite a lot of fat. What good did it do to perform the old Bassini operation? To do so would invite disaster. If one sutured this attenuated internal oblique, this weak or imperfect conjoined tendon, to Poupart's ligament and put the cord on top of it, he would have trouble or a recurrence, no matter whether he transplanted it or not. Those who were acquainted with the operation had adopted as a routine the Wyllys Andrews method of imbrication of the muscles because it had a tremendous advantage.

Final Results in Hypophyseal Surgery.—Dr. Allen B. Kanavel, of Chicago, reported a case of typical Froelich type of hypophyseal disease with marked signs of endocranial pressure; operated in two years ago; infranasal route, cyst evacuated, recovery, result of feeding pituitary gland over two years. The indications for operation in cases of hypophyseal disease might be classified as absolute and relative. Operation was absolutely indicated in those cases in which the tumor immediately jeopardized the life of the individual or was causing progressive blindness. It was relatively demanded when because of perverted or increased or decreased secretion, the well being and ultimately the life of the individual was threatened. Therefore, if the tumor was growing rapidly or had grown to a large size, or if a cyst had suddenly filled, we had pressure symptoms both locally and generally that would imperatively demand intervention. As the safety of the operation increased, the field of the relative demand would be broadened.

Acromegaly should be treated more conservatively, particularly since many of the cases had passed over into the stage of hypopituitarism. As the safety of surgical procedures grew, operation should be attempted in the early stages of the disease before the growth had left the sella. The more complicated and late cases and those with atypical signs should be treated medically until the results in the typical cases were well established.

Coexisting Infection and Sarcoma of the Thyroid.—Dr. Miles F. Porter, of Fort Wayne, Indiana, said sarcoma of the thyroid was very rare, and sarcoma complicated with infection still more rare. Only eleven cases were reported in the United States to June, 1906. A previous history of goitre existed in fifty-three per cent. of cases of malignant thyroid (carcinoma and sarcoma), and in half of these for more than ten years. Two thirds of the cases were in women, and fifty-three per cent. of the cases were in patients between forty and sixty years old. Metastasis of sarcoma of the thyroid by way of the lymphatics was not infrequent. Four additional cases of sarcoma were reported from the literature and one in the author's own practice in a boy of eleven years with metastasis in cervical lymphatics. The spindle cell variety was the most common. No other case complicated by infection was found in the literature. The neighboring bones were frequent seats of etastasis. It was difficult to differentiate between the round cell variety and lymphosarcoma. Complete destruction of the gland tissue by sarcoma was quite common. Sudden growth of an old goitre, especially if accompanied with pain, was significant of malignant invasion, as was hemorrhage into a goitre. Careful examination of all goitres removed would develop the fact that malignancy was more frequent in the thyroid than it was now supposed to be.

Boning of the Thoracic Precardial Wall in Certain Affections of the Heart.—Dr. John E. Summers, of Omaha, stated that cardiolysis was done for the purpose of easing a heart musculature which was constantly being strained by the tugging of the heart against the chest wall because of adhesions between the pericardium and its neighboring organs, mediastinum, diaphragm, pleura, or sternochondrocostal wall. Professor Brauer, of Marburg, conceived the idea that it would be of advantage to remove the unyielding bony precardial wall, changing it "into a movable elastic wall formed solely by musculocutaneous flaps," which also gave a hypertrophied organ more room in which to work. This idea was carried out by Peterson and Simon, first in 1902. Very weak hearts would not be benefited by this operation. The patient must be one whose heart responded to medication and relief from all strain; this was the most important indication for operation and it must be positive. The more evident the sign of tugging, the better the condition of the heart muscle, and the more surely would relief come to it if the overlying bony wall was removed.

From the literature, which was all foreign, the most favorable cases and the only ones in which one could speak of the real lasting relief, were those which it was possible to keep under observations for a fairly long time after the operation. In all cases, however, where the symptoms pointed positively to operation, there was no question that amelioration took place immediately, or shortly after the operation. The study of the failures was important because it served to establish the exact indications and contraindications for operation. In all these, either the index for operation was not positive or there were other complications.

Observations on German Surgery.—Dr. Charles H. Mayo, of Rochester, Minnesota, said the twenty-five university centres in Germany might be classified according to equipment, wealth, numbers of students, and large centres of population. Their hospitals were large and were usually constructed on the pavilion system. Their beds numbered from hundreds to a few thousands. The hospitals were all well equipped with modern Röntgen apparatus, and this department of diagnostic work seemed to have been developed to a wonderful degree of perfection. Much care and thought had been given to the arrangement of the operating rooms, especially to the lighting system, several of them having the powerful arc focused on mirrors.

In all the operating rooms were a great many assistants, and after the essential details had been carried out by the master surgeon, the case was passed on to the first, second, and third assistant surgeon, who completed the work. The surgeons were exceedingly well prepared for their work. They had served long apprenticeships, and they all took pride in speaking of the well known men with whom they had studied and served as assistants.

The excellent team work of those engaged in diagnosis in all departments was worthy of note, each diagnostician following his cases to the operating table to witness the conditions found upon exploration. German surgeons had a great liking for reconstructive work, and much could be learned in a study of their bone, joint, and plastic work. In several clinics he had witnessed the entire transplantation of joints immediately upon their removal from amputated limbs to replace ankylosed ones. Various forms of local anesthetics were used, and the method had been highly perfected.

German surgery might be spoken of as a "school of surgery," and had more or less dominated the surgery of the world. The German surgeon was most efficient. While his surgery had originally developed almost entirely from the laboratory side, the clinical work to-day had certainly advanced remarkably. The methods of hospital support and control had created a system which was adapted to the masses, in contrast to the system in this country which considered individuals. Although many of their methods were not adapted to our institutions and people, they were well worth a visit from any of our surgeons, since there was much that could be learned from them.

Present Status of the Radical Abdominal Operation for Cancer of the Uterus.—Dr. Reuben Peterson, of Ann Arbor, stated that the chief reason for the unpopularity in this country of the radical abdominal operation for uterine cancer was its high primary mortality. Surgeons were not accustomed in these days of highly perfected technic to a primary mortality of from twenty to fifty per cent., which would be a fair estimate of the mortality of the radical abdominal operation, if all reported and unreported cases could be collected. Surgeons necessarily must be content with such a high mortality in emergency operations, neglected cases where the knife held out the only hope of saving life. Under such circumstances the surgeon consoled himself with the thought that without operation it was sure death for the patient within a few hours or days, and that every life saved was so much gain.

The present status of the radical operation for cancer of the uterus in this country was directly dependent upon early diagnosis of the disease. Unless patients could be operated upon earlier, they had about reached the limit of what could be accomplished by the operation, except as the primary and end results might be improved somewhat as the technical skill of the individual operators increased.

The main points to be emphasized were the poor results

obtained in the operative treatment of carcinoma; the possibility of improving the results of such treatment by earlier recognition of the disease by both the profession and the laity; the necessity of inaugurating a campaign of education on carcinoma through committees appointed from the various national surgical and gynecological societies, and, finally, the desirability of having this society be the pioneer in this movement.

Some Phases in the Modern Treatment of Fractures.—Dr. W. D. HAINES, of Cincinnati, said that given a competent surgeon with good hospital facilities, those fractures which might be reached in which the ends of the broken bone could not be kept in proper relation to allow union to take place with a reasonable assurance of overcoming marked deformity and the restoration of function, should be subjected to some type of open method in their management; that fractures occurring in the long bones should, after complete reduction, show crepitus as a final test for freedom from interposed soft structures; in the absence of this confirmatory evidence, union would depend upon examination through an incision and removal of the interposing structures; that all open fractures, after proper cleansing, should be freely exposed and reduced, and retained by appropriate mechanical means. Finally, that ununited or old fractures in which union had taken place at a faulty angle, inducing pain and loss of function, should be subjected to operation.

Election of Officers.—The following officers were elected: President, Dr. Jabez N. Jackson, of Kansas City, Missouri; vice-presidents, Dr. Joseph Rilus Eastman, of Indianapolis, and Dr. M. G. Seelig, of St. Louis; secretary-treasurer, Dr. Arthur T. Mann, of Minneapolis.

St. Louis was selected as the place for holding the next meeting, in December, 1913.

Book Reviews.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

Problems of Life and Reproduction. By MARCUS HARTOG, M. A., D. Sc., F. L. S., F. R. H. S., Professor of Zoology, University College, Cork. With Illustrations. New York: G. P. Putnam's Sons, 1913. Pp. xx-362.

This volume is composed of various essays that have already been published in different nonscientific periodicals, the idea being to present biological matters to the layman in a form that could be understood by one not having a technical training. The articles as now printed have been revised so as to bring everything up to date. Certain of the chapters show a marked independence of spirit in maintaining views that have been frequently attacked. This is particularly the case where the transmission of acquired characteristics is concerned. The author here assails with ungloved hand those neoDarwinians who reject as nonexistent the factor of the inheritance of acquired characteristics. Weissmann with his theory of biophores is quickly set aside. When one compares the men on the opposing sides of the question it seems that the majority of eminent biologists are in favor of Lamarckian transmission as a factor in evolution and variation. To us this seems to be the only position tenable. Other essays deal with problems of reproduction and of heredity. One on the "new force," mitokinetism, presents an interesting and ingenious explanation of cellular division. Nuclear reduction, the function of the chromatin, and fertilization are dealt with, as are several other topics. The articles are interesting, agreeably presented, and clear. They should prove of interest to the layman particularly, but to the biologist as well and can be cordially recommended.

A Manual of Elementary Zoology. By L. A. BORRADAILE, M. A., Lecturer in Zoology in the University of Cambridge. London: Henry Frowde and Hodder & Stoughton; New York: Oxford University Press, 1912. Pp. ix-470. (Price, $3.75.)

Within a little more than four hundred pages the author has compressed much that is useful in zoological work. After an introductory chapter on the animal organism, the frog is taken up and occupies the most prominent part in the book, but as a matter of logical sequence it would have seemed better to place this useful animal elsewhere than at the beginning of the book. The unicellular forms of life are discussed, then the multicellular, through their complex types are taken up; the worms, insects, fish, pigeon, and rabbit. Other chapters are devoted to the mammalia, embryology, classification, evolution, and the position of the animal in the world. The text is lucid and well presented and the illustrations are numerous, well selected, and well executed.

BOOK AND MAGAZINE NOTES.

Lights is a familiar term for the lungs wherever the English language is spoken. "Rising of the lights" is not so well known, however, and a correspondent of the *Lancet*, in the issue for March 29, 1913, is inclined to think the expression a Scotticism for hemoptysis, as it is given in a Scotch Bill of Mortality for 1706 as a cause of fifty-six deaths, while "consumption" is credited with 2,716. The editor of the *Lancet* is inclined to agree with the correspondent in his surmise. Another correspondent, however, in the issue for April 5th, laughs this explanation to scorn and avers that "rising of the lights" is a well known Lancashire expression for flatulent dyspepsia. One of his "lady" patients, he says, complained of rising of the lights and said she had been swallowing "shot corns" (pellets of lead) to keep them down.

Dr. Leonard Keene Hirshberg, in his article on the prevention of cancer in *Harper's Weekly* for March 26, 1913, says that one variety of malignant disease is situated in a woman's bosom, meaning thereby, probably, one of her breasts. Bosom, strictly speaking, refers to the space comprised within the folded arms.

Our readers have had a fair share of communications dealing with the theories of Freud in the interpretation of dreams and have had an opportunity to be placed *au courant* of these fiercely debated subjects of modern psychological study. No. 15 of the Nervous and Mental Disease Monograph Series, published in New York by the Journal of Nervous and Mental Disease Publishing Company, is a neatly printed brochure of seventy-four pages, *Dreams and Myths*, translated from the German of Dr. Karl Abraham, of Berlin, by William A. White, M. D., of Washington, which will afford to those interested an accurate idea of Freud's postulates and conclusions. There is no doubt that Freud's contention that law reigns in the domain of the psychic as elsewhere, is correct; it is obviously unscientific to assign to chance the occurrence and nature of dreams. But that is not to say, as Freud asserts, that to him alone have been revealed the laws of the realm of dreams, their absolute connection with the sexual function, and their invariable dependence upon repressed desires.

We should like to ask reverently why it was necessary for all of Freud's translators to resurrect such a spelling as "phantasy"? We wish all medical translators would take a look into an English dictionary occasionally, before endowing us with new and weird terms; the English language is uncommonly rich already, as well as sufficiently flexible, yet we are becoming constantly alienated from the great body of scientists, not only by our barbarous nomenclature, but also by our syntax and orthography.

Meetings of Local Medical Societies.

THURSDAY, *May 1st.*—New York Academy of Medicine (stated meeting); Brooklyn Surgical Society; Dansville Medical Association; Practitioners' Club, Buffalo; Geneva Medical Society.

FRIDAY, *May 2d.*—New York Academy of Medicine (Section in Surgery); New York Microscopical Society; Gynecological Society, Brooklyn; Manhattan Dermatological Society; Practitioners' Society of New York; Corning Medical Association; Saratoga Springs Medical Society (annual).

Official News.

United States Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending April 16, 1913:

Bailey, C. A., Acting Assistant Surgeon. Directed to accompany the officer of the United States Immigration Service, on or about April 20th, from St. John, N. B., to Quebec, Canada, for duty in the medical examination of arriving aliens. **Hickey**, J. P., Acting Assistant Surgeon. Directed to report to the commanding officer of the Revenue Cutter *Manning* at Mare Island, Cal., for duty during the summer cruise of that vessel in Alaskan waters. **Holt**, J. M., Passed Assistant Surgeon. Relieved from duty at the Columbia River Quarantine station and directed to proceed to San Francisco, Cal., and report to the medical officer in charge of the Marine Hospital, for duty and assignment to quarters. **Knox**, Howard A., Assistant Surgeon. Granted leave of absence for a further period of one month from April 2, 1913, on account of sickness. **Kolb**, L., Assistant Surgeon. Relieved from duty at the Reedy Island Quarantine station and directed to proceed to Ellis Island, N. Y., and report to the chief medical officer for duty. **Preble**, Paul, Passed Assistant Surgeon. Detailed to proceed to Buffalo, N. Y., for temporary duty at the Marine Hospital and for the examination of samples of lake water on behalf of the American Section of the International Joint Commission. **Reed**, Alfred C., Assistant Surgeon. Granted leave of absence for one month and twenty days from March 31, 1913. **Von Ezdorf**, R. H., Passed Assistant Surgeon. Detailed to attend the annual meeting of the Alabama State Medical Association, held in Mobile, April 15 to 18, 1913. **Watkins**, J. A., Assistant Surgeon. Directed to report to the commanding officer of the Revenue Cutter *Bear* for duty during the summer cruise of that vessel in Alaskan waters, vice Assistant Surgeon N. D. Brecht. **Williams**, C. L., Assistant Surgeon. Directed to report to the commanding officer of the Revenue Cutter *Tahoma* during the summer cruise of that vessel in Alaskan waters.

Resignation.

Resignation of Assistant Surgeon Alfred C. Reed accepted by the President to take effect May 20, 1913.

United States Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending April 19, 1913:

Betts, C. A., Lieutenant, Medical Reserve Corps. Arrived at his home on April 4th and will go on leave of absence until his retirement from the service. **Bosley**, J. R., Captain, Medical Corps. Returned to Fort H. G. Wright, N. Y., from duty with flood relief work, and left on April 17th on leave of absence. **Cole**, Clarence Le R., Captain, Medical Corps. Now on temporary duty at Fort Sam Houston, Texas, is relieved from further duty at Fort Leavenworth, Kansas, and with the Second Division will proceed to report to the Commanding Officer at Fort Sam Houston, Texas, for duty. **Collins**, C. C., Major, Medical Corps. Will proceed to the Walter Reed General Hospital, Takoma Park, D. C., for observation and treatment. **Foster**, C. L., Captain, Medical Corps. Left Jefferson Barracks, Mo., on April 14th, on ten days' leave of absence. **Hanner**, John W., Captain, Medical Corps. Granted three months' leave of absence upon his arrival in the United States on or about May 15, 1913. **Jones**, E. C., Lieutenant, Medical Corps. Arrived in Washington, D. C., April 12th, to be examined for promotion; granted leave of absence for fifteen days on completion of examination. **La Garde**, L. A., Colonel, Medical Corps. Relieved from active duty on April 15th and will proceed to his home. **Perley**, H. O., Colonel, Medical Corps. Returned to duty on April 13th; granted leave of absence for one month and twenty-seven days. **Priest**, H., Lieutenant, Medical Reserve Corps. Arrived at his home on April 10th, and will go on leave of absence until his retirement from the service. **Register**, E. C., Lieutenant, Medical Corps. Arrived at Fort McPherson, Ga., on April 13th, from flood relief work. **Smith**, W. H., Captain, Medical Corps. Relieved from duty with the Twenty-seventh Infantry, Texas City, Texas, and assigned to duty with Field Hospital No. 3. **Willis**, J. M., Lieutenant, Medical Corps. Relieved from duty with the Twenty-eighth Infantry and ordered to duty with the Nineteenth Infantry, Galveston, Texas.

United States Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending April 19, 1913:

Allen, A. H., Passed Assistant Surgeon. Detached from the Atlantic Reserve Fleet and ordered to the *Connecticut*. **Dessez**, P. T., Passed Assistant Surgeon. Detached from the Navy Yard, Boston, and ordered to the *Tonopah*. **Huff**, E. P., Passed Assistant Surgeon. Detached from the *Florida* and ordered to the *Scorpion*. **Irvine**, W. L., Assistant Surgeon. Detached from the *Connecticut* and ordered to the Atlantic Reserve Fleet. **Phillips**, E. W., Assistant Surgeon. Detached from the *Minnesota* and ordered to the *Kansas*. **Streaten**, R. J., Passed Assistant Surgeon. Detached from the *Tonopah* and ordered to the *Florida*. **Valz**, E. V., Passed Assistant Surgeon. Detached from the *Kansas* and ordered to the *Minnesota*. **Walton**, D. C., Assistant Surgeon. Detached from the *Scorpion* and ordered to the *Pittsburgh*.

Births, Marriages, and Deaths.

Married.

Barnum—Teague.—In Boston, on Wednesday, April 16th, Dr. Francis T. Barnum and Miss Ida Etta Teague. **Boogher—Holliday.**—In St. Louis, Mo., on Saturday, April 12th, Dr. J. Leland Boogher and Mrs. A. M. Holliday. **Curley—Curran.**—In New York, on Tuesday, April 15th, Dr. W. H. Curley, of Bridgeport, Conn., and Miss Josephine Curran. **Doyle—Fair.**—In Natick, Mass., on Tuesday, April 8th, Dr. Thomas F. Doyle and Miss Nellie Fair. **Easton—Hays.**—In New York, on Wednesday, April 23d, Dr. Charles D. Easton, of Newport, R. I., and Miss Margaret B. Hays. **Gordon—Levy.**—In Philadelphia, on Tuesday, March 11th, Dr. Chester A. A. Gordon and Miss J. Beatrice Levy. **Hay—Austin.**—In Rosemont, Pa., on Saturday, April 12th, Dr. George Hay, of Johnstown, and Miss Eugenie Austin, of Oak Lane. **Jennings—Anderson.**—In Grosse Isle, Mich., on Saturday, April 19th, Dr. Alpheus Felch Jennings and Miss Catherine Anderson. **Van Riper—Dwight.**—In New York, on Tuesday, April 15th, Dr. Arthur Ward Van Riper, of Passaic, N. J., and Miss Daisy Dwight.

Died.

Alexander.—In Mysore, South India, on Sunday, April 13th, Dr. Clara J. Alexander, of Boston, Mass. **Collins.**—In Washington, D. C., on Friday, April 11th, Dr. John F. Collins, aged sixty-seven years. **Craig.**—In Columbia, Pa., on Tuesday, April 8th, Dr. John Jay Craig. **Doolittle.**—In Easton, Pa., on Saturday, April 12th, Dr. Egbert D. Doolittle, aged sixty-seven years. **Goodhart.**—In Philadelphia, on Wednesday, April 9th, Dr. Chester Goodhart, aged thirty years. **Gunby.**—In Crisfield, Md., on Thursday, April 10th, Dr. Hiram H. Gunby, aged sixty-one years. **Harris.**—In Baltimore, Md., on Tuesday, April 8th, Dr. James E. Harris. **McCartney.**—In Avon Park, Fla., on Friday, April 11th, Dr. Mary Elizabeth McCartney, of Rochester, N. Y., aged sixty-four years. **Rouse.**—In Buffalo, N. Y., on Wednesday, April 9th, Dr. Morris D. Rouse, aged seventy-five years. **Scott.**—In New Orleans, on Friday, April 11th, Dr. J. W. Scott, aged eighty-seven years. **Sprinkle.**—In Marion, Va., on Tuesday, April 8th, Dr. George W. Sprinkle, aged sixty-six years. **Van Brakle.**—In Forest Hills, N. Y., on Monday, April 14th, Dr. James Van Brakle, aged eighty-four years.

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Original Communications.

HEMATURIA.*

A Study from the Practitioner's Standpoint.

BY VICTOR COX PEDERSEN, A. M., M. D.,
New York.

Hematuria or hematuresis may be briefly defined as blood in the urine or as blood associated with the act of urination in quantity sufficient to discolor the urine or be a factor on microscopical examination. It is, therefore, strictly speaking, a symptom, but one of such striking moment and of such far reaching possibilities for the patient that its cause and source must be settled without delay. Its significance is always extravasation of blood through intense congestion, erosion, or rupture of microscopic or macroscopic vessels somewhere in the urogenital tract whose focus and extent must be immediately investigated.

The varieties of hematuresis relate to the condition of the blood passed, the activity of the hemorrhage, the causes, the local origin, and the relation of the blood to the act of urination, which is, as explained later, initial, concurrent, or terminal.

For the purpose of this paper the term, initial hemorrhage, means one that either actually precedes the urine or appears only in the first flush of it. Concurrent hemorrhage, also called total, means that the blood is well mixed with all specimens of urine. Terminal bleeding means either that the urine is practically blood free and that the symptom occurs when the bladder is empty or that the last flush of urine brings the blood with it.

The condition of the blood may be macroscopic or microscopic in amount, recent and red or old and dark, fluid or clotted, or comprise only the coloring matter, in which case it is known as hemoglobinuria or hematinuria.

The activity of the bleeding may be acute, subacute, and chronic in development, scanty, moderate, or copious in amount, intermittent or remittent, and recurrent or persistent in course.

The causes fall into the commonplace classification of traumatism, genital disease, urinary disease, systemic infection, and parasites, particularly entozoa. This classification of the causes may be simple, but the designation of a definite etiology is often fraught with the utmost difficulty and uncertainty.

The local origin of hematuria may be at any histological point of the anatomical subdivisions of the urogenital tract, hence may be renal, ureteral, vesical, prostatic, or urethral. Here again the recognition of the precise bleeding point or tissue may sometimes defy our best efforts.

This paper intrinsically deals with blood in the urine from the standpoint of the general practitioner and will state, it is hoped, a few of the broad facts concerning this symptom.

The clinical diagnosis of hematuria includes, not only an exhaustion of all the time honored older means of recognition, but also a judicious application of cystoscopy, ureteral catheterization, urethrascopy, radiography, and any other means suggested by a given case. The laboratory diagnosis of hematuresis is an essential detail of this important topic, but space forbids more than mention of the fact that minute amounts of blood are detected only with the microscope or with such procedures as the guaiacum test (Almen's), liquor potassæ test (Heller's), and the spectroscope, as examples. Let us, therefore, rather consider laboratory investigation as slightly beyond the limits of this paper.

The clinical diagnosis of hematuria must embrace determination of the cause and the focal point of the bleeding, so far as practicable. The broader causes of urogenital hemorrhage are slightly the easier of these two questions, in that a carefully taken history will almost invariably give a direct or indirect "lead" to the answer. Remote or recent traumatism is usually obvious in itself and its sequels or definite in its history. Genital disease comprises the various infections, especially the gonococcal, yet even here the difficulties begin. Urinary disease is frequently still more uncertain. Systemic conditions such as malaria, scurvy, and hemophilia show hematuria in various association with the chills and are commonly very easy to recognize as a cause, just as are the exanthemata in childhood. Hematuria in natives and travelers through the tropics almost invariably suggests the entozoa causing filiariasis and similar entozoic conditions.

Each of these various factors will receive incidental attention as it comes up in the course of this paper. We are, therefore, directly involved with the main subject—the source of the hemorrhage in the several urogenital organs.

Renal hemorrhage always means nephritis, lithiasis, ulceration, especially tuberculous, neoplasm, or trauma. The nephritis may be acute, due to any of the well known causes of this condition. In delicate children a severe attack of any of the children's infectious diseases usually has hematuresis, which, although microscopic in degree as a rule, is not

*Read, by invitation, before the Litchfield County Medical Association at Winsted, Conn., April 22, 1913.

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rarely macroscopic. The course of either condition should be known and followed. Similarly in adults, acute nephritis of both the infectious and idiopathic types may in its onset be hemorrhagic. The intoxication of the underlying disease is the agent at work.

Chronic nephritis may be a cause of hematuria more frequently than is commonly supposed, but almost invariably of the type which shows exacerbations and occurs either during the chronic nephritis of purely medical or essentially infective origin. Consonant with the character of the disease such hematuresis is apt to be prolonged and profuse and to appear *pari passu* with the relapses of the disease toward acute character. As a rule pain is absent, but it may be present, due to the congestion which precedes its appearance. Tenderness and enlargement of the kidney follow the same law as the pain. Activity in common experience increases the bleeding, while repose and inactivity may decrease it, but are more often without effect, as one would expect when viewing such a kidney in the hand after death. The urine of these cases is during the quiescent nonhemorrhagic intervals that of chronic nephritis with or without exudation or that of chronic infection with organisms more or less abundant. Thus one sees variations in the low specific gravity, number, character, and size of the casts and the quantity and type of albumin. In the active periods the bleeding usually masks all these findings. Cystoscopy reveals a normal bladder in the truly medical nephritides or changes in the ureteral mouths in the presence of infection. Thus some of these chronic cases pass into the category of surgical cases.

Congestion should be reckoned as nephritis for the purposes of this paper, and may be of hemorrhagic degree and of recurrent appearance such as is found in extreme displacement of the kidneys. Venostasis as in hydronephrosis and perhaps in advanced hepatic disease is another picture of congestion and may be hemorrhagic. Bangs (*Medical News*, February 11, 1905) reports a case of hydronephrosis in which bleeding was the diagnostic symptom. Varices of the kidney are usually congenital, occasionally acquired anatomical defects and self evidently fruitful causes of hemorrhage.

Lithiasis usually adds to the preexistent chronic infection and inflammation of the kidney, pelvis, and ureter, the traumatism due to the presence of the stone, hence bleeding usually follows attacks of pain indicating change in the position of the stone.

Tuberculosis of the kindey determines hematuresis as soon as ulceration sets in and is in fact the type *par excellence* of ulcer as a cause of this symptom. In the same category belongs neoplasm of the kidney with necrosis and erosion of bloodvessels; but the engorgement due to the infiltration of tuberculosis and new growth may also cause hemorrhage. It matters little whether the type of the tumor is hypernephroma, cancer, or sarcoma.

The nonoperative or medical causes of hematuresis embrace the various manifestations of acute and chronic nephritis; while the operative factors are lithiasis, tuberculosis, neoplasm, traumatism, and hydronephrosis. On the borderline are the congestive cases, especially those of movable kidney.

The diagnosis of the fact and focus of renal bleeding, with or without ureteral bleeding, or ureteral hemorrhage without kidney involvement, does not permit in the light of modern methods the application of any rules, respecting, for example, the character, quantity, and color of the blood. The absence of the following data on laboratory investigations is without value as a negative proof of renal hematuria. Their presence on the other hand is very frequently helpful. Such data are cylindroid clots pointing to the ureter as their source, clotted blood casts of the ureter of unmistakeable size, renal blood casts, and renal casts with densely adherent red cells.

Pain in the kidney zone without, before, during, or after the bleeding is not more than suggestive, because vesical conditions may so alter the course and calibre of a ureter as to excite referred pain in a normal kidney.

The diagnosis really depends on objective examination with cystoscopy, ureteral catheterization, and radiography. Urinary segregators are of doubtful reliability. Cystoscopy is competent to decide as a rule in a few moments whether the bladder or the ureter and kidney are the source of the blood. If all three are involved, as is sometimes true in tuberculosis, ureteral catheterization is unavoidable. Ureteral catheterization is also necessary to determine the source of small hemorrhage from the kidney with a normal bladder. If the quantity of blood is large and the bladder washed until the medium is clear, the blood is seen to spurt out of the ureter like smoke puffs. Ureteral as distinguished from renal bleeding might be diagnosticated by using a small catheter and taking specimens from the canal at four or five levels until clear urine from the pelvis is reached. If, however, the bleeding proceeds from the ureteral pelvis, such a procedure would fail in the presence of what would then be clinically renal hemorrhage, so that such a distinction would be of theoretical rather than practical importance.

Neoplasm as a source of renal hemorrhage requires the earliest possible recognition while the tumor is impalpable, insensitive, and nonadherent, because when it is palpable, tender, and fixed, it is commonly beyond operative intervention. Renal sarcoma occurs in childhood, carcinoma in midlife, and hypernephroma and the mixed neoplasm of Wilms at almost any age. Hemorrhage is least frequent with sarcoma. In the other neoplasms it is active, precipitate, and profuse, earlier from the renal pelvis than from the parenchyma, commonly increased by exercise and motion and unaffected by repose, with a urine devoid of nephritic elements and rarely containing tumor detritus. Ureteral colic due to clots is not the rule, and pain and discomfort are not present in the operable stage in any marked degree. Cystoscopically the mouth of the ureter is normal. The diagnosis should be made so early that there is no cachexia from hemorrhage and no rise in temperature or absorption from the cancer.

The importance of a complete diagnosis in renal hemorrhage is illustrated by the following case of hypernephroma, operation, and death nearly a year after I had examined it and made a diagnosis of syphilis of the bladder with hemorrhage, without, however, ureteral catheterism. Active antisyphi-

litic measures seemed to have stopped the hemorrhage and improved the urine and bladder, and the general health. After rather a long period of comfort the man disappeared from view and treatment, as do most syphilitics whenever their general condition is bettered. In due course the hemorrhages returned more or less incessantly, and in the care of a colleague after another diagnosis with ureteral catheterization, hypernephroma was determined and operated on. At this time the kidney showed enlargement, while at my investigation no focal kidney conditions were subjectively or objectively present. It is likely that if I had made a complete analysis of the case, as I should now do in a similar patient, I should have recognized the tumor in a far earlier and more operable condition than it was a year later. This incident carries its own lesson.

Renal lithiasis as a cause of hemorrhage should also be diagnosticated in its earliest possible degree —in the aseptic rather than the septic stage, as in the latter operative intervention is much less valuable. Unlike neoplasm, lithiasis may occur at any age, even in childhood, and is not uncommon in adolescents and midlife. Careful history usually records excess of crystals or the passage of gravel and calculi in the urine. The bleeding as a rule is not profuse, painless if without clots, painful if with clots, and excruciating if accompanying the passage of a stone down the ureter. Anything causing a stone to move in its bed in kidney or ureter will either excite or increase the blood, while rest in bed is usually followed by prompt and pronounced disappearance of at least macroscopic blood. When infection is added to the lithiasis, pain of more or less constant or remittent type appears, together with enlargement and tenderness of the kidney previously free from these signs. The urine is of the "attrition" type, due to the rubbing of the stone about in its bed and resulting in exfoliation of epithelium, increase and thickening of the mucus, the presence of pus in varying quantities, microscopic in the aseptic and macroscopic in the infected cases, and finally crystals due to those changes in the urine from which the stone originally arose. Thus it is sometimes possible from these crystals to suggest the character of the stone.

The diagnosis of the hematuria of renal lithiasis rests materially on radiography, which should never be omitted in doubtful cases, is advisable in all cases, and in expert hands rarely fails to give some result except in pure uric acid stones, and even in these, changes in the kidney shadow may be highly important.

The choice of operation for these cases is the period before infection sets in, hence the importance of early and thorough going diagnosis.

When the results of radiography are not consonant with clinical and cystoscopic indications, it is best to have another sitting. I recently reported a case of lithiasis of nearly two years' duration in which a first x ray examination was negative, while a second and third were positive and more and more conclusive of stones in the kidney, ureter, and bladder.

Renal tuberculosis with hematuria is being recognized more and more frequently through improved procedures in diagnosis. Bleeding may be an early and prominent symptom or appear after the establishment of pyuria, which is rather commonly the fact. The lesion, like tuberculosis elsewhere in the body, has little respect for age, but rather favors the earlier than later half of life. In quantity the blood is small and intermittent with long or short periods of absence, or copious and persistent with little or no remission. Either or both kidneys may be affected and are congested, palpable, and tender, and show more or less discomfort and pain, rather constant with exacerbations, especially after pyuria appears and during actual bleeding. The tubercles are usually in the walls of the pelvis of the ureter or on the surface of the papillæ of the kidney, projecting into it so that ulceration in eroding blood-vessels produces bleeding directly into the ureter with little or no signs of blood casts from the tubules. Another form, however, has the tubercles scattered along the depth of the tubules so that on gross examination they are not or at most very little in evidence. They may, nevertheless, cause bleeding by local hyperemia or ulceration into the tubules. These cases are difficult to diagnosticate after nephrectomy, excepting with full pathological analysis. The urine in tuberculosis of the kidney is of the desquamative type due to the chronicity and usually superficial character of the lesions, hence beside the blood the urine shows abundance of epithelium from the pelvis and the ureter with, sooner or later, pus containing altered epithelial cells as well as white blood cells. The one great diagnostic point is the discovery of the tubercle bacillus in the urine. The morphology must be proved by inoculation into the peritoneal cavity of guineapigs for death in a few weeks, usually from four to eight, or into the thigh for deposits of the disease in the lymphatic glands of the groin, which usually occurs in about fourteen days, so that a much earlier decision may, in this way, be reached.

As in the preceding causes of renal hematuria, the earlier the diagnosis is made the better, as at this stage there is very great value in the use of bacillus emulsion in ascending doses, beginning at 0.0001 gramme twice a week and increasing an equal fraction at each dose, until at the end of a year the patient is receiving large doses. No dose or rate of repetition must be followed which results in a reaction, as such overdose may not only hinder the progress, but, if marked, increase the susceptibility rather than the resistance of the patient. All known methods of hygienic treatment should be included in this management.

The significance of renal hemorrhage to the patient's life is illustrated by a case which I recently saw in consultation. The woman had been allowed to pass blood in her urine for nearly six weeks in noticeable and even large quantities before consenting to consult a surgeon. By this time she was very anemic and weak and not a good operative risk. Cystoscopy revealed jets of nearly pure blood from the right kidney every few seconds, so that in a brief period the bladder had to be washed and distended again. The left ureter was small and seemingly normal. Nephrectomy was undertaken as the one thing possible to save the woman, but her strength had so wasted that she died within ten

hours of the operation. No obvious lesion was discovered on gross pathology, but tuberculosis was the final diagnosis reached. My own opinion was that it was a general tuberculous infection of the kidney, too severe and recent for the formation of tubercles. The case was in the hands of the surgeon too short a time for the guineapig and other tests of the urine for the bacilli.

Premature and promiscuous nephrectomy for tuberculosis seems no longer justifiable, except in the presence of persistent, dangerous hemorrhage and obvious failure of the expectant and bacterin management. A large number of urologists, however, believe in early operation. An essential part of the operation is the removal of the largest possible length of the ureter in the midst of abundant protection of the wound and thorough cauterization of the remaining stump in order to prevent focal inoculation of the raw surface.

Cystoscopy in hematuria due to tuberculosis of the kidney, even in the early cases, is characterized by unmistakable thickening in the wall of the ureter, whereby both occlusion and tortuosity occur, so that catheterism is difficult or impossible. The meatus is patent, inelastic, inactive, elevated, and hyperemic—"golf hole" ureter is the term applied to it. Almost always tubercles may be found in the cystoscopic field close to it, in various stages of development and relation.

The importance of early cystoscopy in suspected tuberculosis is shown by the following case of a young man in my hands, who noticed pyuria for three months and then pain, for which he consulted me. Cystoscopy showed a thickened, almost impassable, ureter, a "golf hole" retracted ureteral mouth, pearllike tubercles around it, and purulent urine emanating from it. Bacilli were in the urine. Benefit is being secured and I hope operation avoided by the Trudeau method, which is the patient's election of treatment rather than operation.

Hematuria of renal origin from causes other than those specified, may proceed from hydronephrosis, especially during the periods of acute urinary abstraction with circulatory interference; from movable kidney during the moments of extreme prolapse, also through circulatory effects such as kinking and pressure: from cystic kidney at the moment of rupture of multiple cysts into a common cavity with venostasis and bleeding, or at the moment of rupture of a large cyst into the pelvis with erosion of a bloodvessel. Careful physical examination and radiography commonly establish the diagnosis in hydronephrosis and movable kidney combined, obviously with attention to uranalysis, while sudden changes in the characteristics of a kidney enlargement, associated with previously unknown constituents in the urine, will suggest cysts and their rupture. Animal parasites, particularly *Ecchinococcus* and *Distoma hæmatobium* (bilharziriasis) in patients from parts of the globe where these diseases are frequent, are a potent cause of renal hemorrhage. Uranalysis will reveal the daughter cysts and the hooklets of ecchinococcus and the ova in bilharziriasis.

Ureteral hemorrhage is an undoubted entity, but is frequently diagnosticated only by its persistence after a nephrectomy. Its distinction from renal hemorrhage of the same side rests on careful ureteral catheterism at levels of every five centimetres or so with a catheter sufficiently small to allow the blood to escape around it and the untainted urine through it. If the urine is still bloody when the pelvis of the kidney is reached, gentle lavage should be performed until clear return fluid is obtained if possible. If soon after this the urine is again bloody, no differential diagnosis may be reached, as in that case the bleeding is either directly at the outlet of the pelvis or so high in the ureter as to backset into the pelvis or from the kidney itself. Radiography will distinguish lithiasis, and with the aid of argyrol or collargol may indicate kinks, strictures, points of pressure, deformity, and thickening—as bleeding from the ureter proceeds from the same general conditions as elsewhere in the urogenital tract, namely, the congestion of kinks, strictures, and pressure, the special infections such as tuberculosis, the common manifestations of lithiasis, and finally primary neoplasm.

Hematuresis due to vesical conditions means, as elsewhere in the urogenital tract, change in the mucosa always circulatory and not infrequently organic in character. The essential causes are the same as those previously enumerated for the kidney and ureter—namely, congestion, infectious and noninfectious inflammation, varicosities, lithiasis, papillomata, traumatism, chemical, thermal, and instrumental (usually synonymous with and therefore properly classified under simple inflammations), ulcers, simple, tuberculous, typhoid, and cancerous, rupture by traumatism or by pathological change, as in spinal disease, and finally retention of extreme degree, which, when suddenly relieved in its entirety, not uncommonly causes hemorrhage into the bladder. It is probable that this is also one mechanical explanation of hemorrhage in hydronephrosis which, when at its limit, may rapidly evacuate itself and hemorrhage ensue. The previous pressure on the walls produces paresis and partial occlusion, and when rapidly removed permits the inrush of blood to set up the hemorrhage in both bladder and hydronephrosis. A practical point, therefore, is never to draw off more than half the contents of a very full bladder at the first entrance, so as to avoid this purely mechanical condition. The remainder left in the bladder may be withdrawn after an hour or two without such accident.

Vesical hematuria possesses no definite symptom complex from which the diagnosis of cause may always be made minutely. On a broad basis, however, certain clinical facts are of help, especially the age of the patient, the presence and absence of pain, and the special features of urination. The matter of age involves the other two data completely.

Pain in infancy and childhood suggests lithiasis most commonly, and less commonly sarcoma of the bladder wall. Radiography and, under a general anesthetic, bimanual examination, and in older children cystoscopy are inevitable. Pain from adolescence to early midlife is most frequently seen in the acute cystitis of gonococcal, tuberculous, and typhoid infections, and much less frequently in stone

and neoplasm. Pain in later midlife and the earlier advanced years is an indubitable herald of benign or malign neoplasm and early prostatism with stone; while the last condition is the one first to be thought of in late life. The pain is present before urination when the bladder as a whole is irritable, as in the infections and ulcers, and stone during agitation. It is manifest during urination in much the same circumstances, while terminal pain occurs when the bladder sinks down on abnormal contents or strains its diseased walls respectively, as in stone, ulcer, and neoplasm.

Hemorrhage from the bladder may or may not accompany the pain. The two symptoms occur together in varying degrees from time to time with all the usual causes enumerated, especially the infections, ulcers, stone, and neoplasm after even minute necrosis. Hemorrhage without pain, however, may occur in neoplasm and congestion.

The function of urination may be profoundly altered in the presence of vesical hematuresis, as nearly all the causes of the latter disturb the bladder in its continence and capacity sooner or later. Thus we see pollakiuria or great frequency of urination more or less in all forms of vesical disease, most particularly in tuberculosis, ulcer, neoplasm, and stone. The other conditions are a little more apt to pass into a period of relative inactivity, while these four are steadily progressive and always produce cystitis in a short time, and through their own pathological processes maintain such cystitis in a high degree of severity. Hence it follows that dysuria, strangury, and tenesmus commonly indicate the more serious vesical lesions.

Bimanual examination in children has already been spoken of, but is not of much service in adults, except in cancer of the prostate and sometimes of the bladder. Its chief function is to estimate the distention and thickness of the bladder walls.

Radiography, however, with or without distending the bladder with fluids opaque to the x ray is important.

Uranalysis and consideration of the hemorrhage itself is important. The bleeding is never initial, i. e., in the first glass only. It is invariably concurrent or total, well mixed with the urine, and most commonly of all, especially in early cases, terminal, appearing either with the last flush of urine or after it when the bladder is making a final effort at evacuation. Accompanying such bleeding, as previously stated, we always have more or less numerous symptoms of cystitis.

Cystoscopy is, after all, the last resort in cases of vesical hemorrhage. In the acute infections it is contraindicated until after subsidence has begun. It permits diagnosis of the bleeding points of varices and the various kinds of hyperemia, commonly of the actual presence of stone and its attrition type of cystitis, also of ulcers, tuberculosis, papilloma, and neoplasm, and frequently even of the exact site, extent, and nature of rupture of the bladder. In this connection be it noted that a large hemorrhage means extraperitoneal intravesical rupture, while a smaller hemorrhage means intraperitoneal extravesical rupture. A distinction between the two may be made with the aid of the catheter to see how much blood and urine are in the bladder and with rectal examination for fluctuation in the pelvic peritoneum.

Where a careful diagnosis of hematuria may lead is exemplified by the discovery of two stones in the bladder of an old man by cystoscopy and radiography. He gave a few symptoms, ascribed by his family physician to enlargement of the prostate, which on rectal examination and exploration of the bladder with the catheter was found to be obviosly hardly enlarged enough to account for his suffering. There had been one very slight attack of bleeding and no classical symptoms of stone. The cystoscope revealed two calculi about the size of birds' eggs, lying close together in the retroprostatic pouch in the midst of fairly normal mucous membrane. Litholapaxy relieved the disease. The patient is now being watched for changes in the prostate.

The importance of vesical hemorrhage is illustrated by the following case, referred to me a few days ago.

Case. H. C. U., United States, white, forty years old, married, salesman, venereal disease denied. Sexual habit moderate. Had been bleeding off and on from the bladder for nearly four years; cause unknown; no emaciation, fever, or pyuria; bleeding excited by constipation, catharsis, and diarrhea; during attacks of blood urine always colored especially at the end of the function; no gravel or stones; pain in the penis occasional and sharp; frequency every four hours by day, every eight hours by night; urgency moderate and occasional both with and without the bleeding, likewise tenesmus; degree of hemorrhage constant for the past four years without great increase; amount a few drops after urination, never a glassful; persisted for a day, rarely more; recurred every four or five days each month, so that in each week he had blood for a day or so and in each month for a week or so; bleeding intermitted sometimes in a given day; effort to evacuate all urine brought blood exactly like constipation; riding in railway trains and automobiles did not provoke the bleeding.

Cystoscopy done in June, 1912, was said to have been negative, but cystoscopy done by the writer recently showed a large papilloma back of the right ureter slightly near the middle line and another larger papilloma on the left side completely hiding the left ureter and encroaching upon the trigonum and neck.

This patient should have been cystoscoped four years ago when the bleeding first began. The cystoscopy of June, 1912, must have for some reason failed of thoroughness and final diagnosis. These papillomata were the size of the end of the thumb and required three cystoscopic fields for their examination.

Prostatic and urethral hematuresis is always initial, occasionally concurrent, and rarely terminal. It is in suspected urethral cases that the Wolbarst five glass test is of particular merit unless the hemorrhage is copious enough to overcome the distinctive features of the test. The causes of these types of hemorrhage are exactly as elsewhere in the urogenital systems, except for the new element of congestion due to hepatic disease, abdominal tumor, extensive hemorrhoids, and urethral stricture. Blood is often seen in the products of prostatic massage, in the semen after intercourse or emissions, and at once suggests the prostate and the seminal vesicles as its source. Blood after an erection without intercourse or emission usually comes from a stricture, but may also proceed from the prostate by congestion. Blood following gentle instrumentation denotes dilatation of a stricture or

irritation of granulations or even papillomata of the urethra. If the results of animal experimentation may be applied to man in their entirety, hematuresis due to such drugs as turpentine and cantharides and possibly hexamethylenamine is seated rather in the bladder than in the kidneys or urethra. Acute posterior gonococcal urethritis frequently causes terminal bleeding, occasionally of copious degree.

Tuberculosis of the urogenital tract is so common a condition that the picture of its bleeding should be fairly definite. It is, sooner or later, a constant symptom, particularly as the case gets older, because then the erosions of the tubercles appear. The quantity of blood lost is rarely as free or sudden as in neoplasm, because in the latter the process extends oftener to the depth of larger vessels than does tuberculosis as a rule. Its onset is usually a few terminal drops, almost always accompanied with varying degrees and relations of pain, tenesmus, spasm, and strangury, all augmenting with the duration of the lesion and typical of tuberculous cystitis. Large clotted masses of blood within the bladder are very rare in tuberculosis. The clots are rather frequent and small, if present at all. While the bleeding as a symptom is constant in tuberculosis, sooner or later, the act of bleeding itself comes and goes, so that there may be longer or shorter periods without hemorrhage, during which, however, a highly irritable cystitis is present.

From what has been said in this contribution it is hoped that the great importance and the grave possibilities of even minute urogenital hemorrhage have been made clear. It is quite safe to say that no bleeding is so scanty, but that it merits immediate and prompt investigation, because it may be the earliest sign of conditions essentially progressive and incurable excepting with the aid of surgical intervention practically at the moment of the earliest possible diagnosis. Such intervention may be removal of the offending lesion or at least adequate and energetic, well balanced treatment. The rule to follow is, therefore, that given hemorrhage, it must be traced to its source and cause without delay.

45 WEST NINTH STREET.

SHOULDER AND ARM PARALYSIS OF POLIOMYELITIS.

Humeral Suspension from the Acromion by Interarticular Silk Ligaments.

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Holding the humeral head in contact with the glenoid cavity by artificial suspension of the humerus from the acromion fulfills at once one of the chief indications in the treatment of the deltoid and arm type of residual paralysis. Arm weight normally sustained by the shoulder muscles and capsular ligament, then becomes transferred to the scapula. This procedure removes the arm weight from the paralyzed muscles, thereby eliminating one of the main obstacles to improvement or recovery.

The plan proposes the insertion of specially prepared silk strands in tunnels drilled through the acromion and head of the humerus; these, tied on top of the acromion, hold the humeral head close to its articulation. The drag is at once removed from the deltoid muscle and joint capsule, as shown by obliteration of the depression below the acromion.

The effect of this procedure, after operative reaction has abated, is shown by the patient's ability to perform certain shoulder and arm movements through the agency of muscles moving the scapula. Muscles not involved by the primary attack, and others, in the shoulder girdle groups that were only partially paralyzed, are capable of effecting a very useful quality of movement in the shoulder and arm when scapular and humeral movements can be

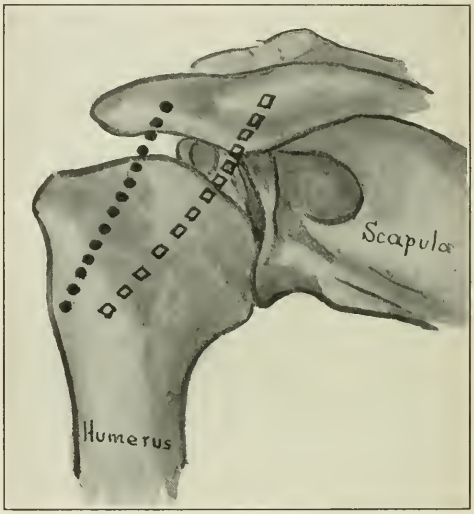


FIG. 1.—Diagrammatic posterolateral aspect of shoulder to show lines for inserting silk ligaments for suspension of humerus to acromion. Round dotted lines, tunnel through acromion and head of humerus to the anterolateral surface of greater tuberosity. Square dotted lines, parallel tunnel through bones to the posterolateral surface of greater tuberosity.

combined. A short period only of postoperative restraint is required before these voluntary efforts are effective in assisting to improve function in the limb. Associated muscles that have suffered depreciation from disuse quickly manifest improvement in vigor, and the entire limb soon responds to these stimuli. Use of the arm begins to increase as soon as such compensatory movements can be effected, and forearm groups, coincidentally or consecutively impaired with the shoulder muscles, are especially quick to exhibit the effect of motor impulses conveyed to the hand in this indirect way. The writer has recently carried the idea of artificial suspension of the limb a step farther in associated paralysis in the forearm and hand, by suspending the ulna to the humerus in a position of semiflexion, to remove weight from the forearm flexors. This modifies the "dangle arm," and places the hand in better position to perform movements transmitted from the shoulder. This

combination of arm and forearm suspension by silk ligaments is especially indicated when power in the biceps and brachialis anticus is inadequate for flexing the forearm.

An analysis of various methods of treatment, operative and mechanical, for deltoid paralysis, shows the main effort to be directed to relieving the paralyzed muscles and the capsule of the joint from arm weight. Some operative procedures contemplate transposition of an intact muscle supply to one of the paralyzed muscles, e. g., Hoffa's operation, by which a part of the trapezius is separated from its acromial attachment and fastened to the deltoid muscle.

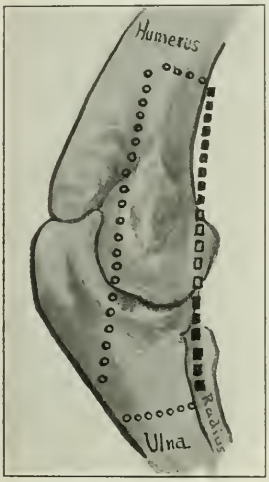


Fig. 2.—Diagrammatic posterolateral aspect of elbow; the ulna in semiflexion, showing lines for insertion of silk ligaments for suspension of ulna to humerus. Round dotted lines, tunnels through bones and location of silk strands. Square dotted lines, tunnel under soft tissues on anterior aspect of elbow, and location of ligament external to bones.

The chief benefit from this operation depends on elevation of the head of the humerus into closer contact with the glenoid cavity, permitting the scapula and humerus to move in unison. Arthrodesis has been helpful in some cases by securing fibrous attachment of the head of the humerus to the glenoid cavity, so that both bones can move together.

Extracapsular silk strands inserted periostially between the end of the humerus and the scapula hold up the humerus, diminish the drag from arm weight, and enable the arm to be moved by the scapular muscles. All of these procedures exert their beneficial effect largely by affording uninvolved and partly paralyzed muscles a better opportunity to move the arm in a compensatory manner.

Different mechanical devices employed in the treatment of deltoid paralysis aim to accomplish the same purpose. But their use is of questionable value if one may judge by results, and open to the disadvantages, first, of imposing the burden of the apparatus itself on already overweighted muscles: and, second, the apparatus restrains whatever there may be of motive power in accessory muscles that should be utilized to favor improvement in the paralyzed groups. The earlier months following the initial attack of poliomyelitis are generally devoted to some form of treatment of this character, supplemented by massage, electricity, etc. If one considers that arm weight as a factor in the deterioration of arm function becomes operative from the beginning of the attack, it is evident that a favorable period for aiding the disabled muscles is often lost by prolonged employment of what appears to be an ineffective method.

Operative procedures, such as have been mentioned, are usually adopted after an attempt to better conditions by the use of one or other of the mechanical methods. In long standing paralysis, when some form of operative has followed mechanical treatment, it is not unusual to observe that an operation to support the head of the humerus in better elevation is at once attended by a modification of arm disability. The inference is strong, therefore, that an earlier resort to such a method would have been of relatively great advantage to the patient.

It has been deemed inadvisable, however, to use operative methods, such as have been employed for residual paralysis, in the early months of its existence; or to employ them at the early age when paralysis often occurs. Some of these procedures are complicated and formidable for very young patients, and do not meet with ready acceptance by parents. Selected cases, offering only the best chance of success, are therefore generally treated by this plan. For these and other reasons that could be mentioned, it is desirable that a plan of operative treatment should be formulated, applicable to any age of the patient, and which may be employed at any reasonable time after residual paralysis has become established. It should effectively remove arm weight from the muscles and joint capsule, eliminate all restraints to possible voluntary arm movements, and not interfere with any recovering muscle groups, or hinder action in intact muscles which are available for effecting shoulder and arm movements. The term "operative" treatment is emphasized in this connection because, it is the belief of the writer, these indications cannot be fulfilled by any mechanical method or device that has, thus far, been used or suggested.

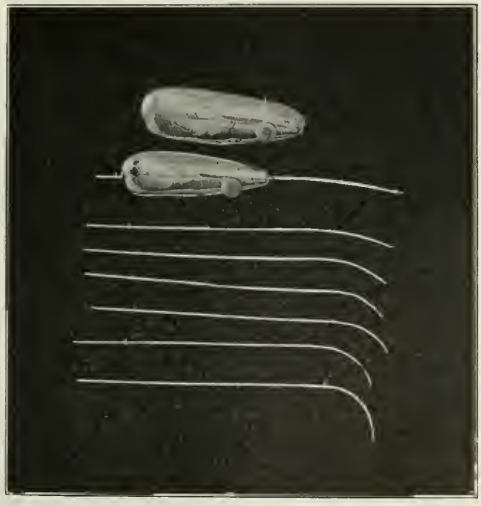


Fig. 3.—Drills for tunneling bones and soft parts for inserting silk ligaments in joints. Note adjustable handle secured in position by set screw. Drills have different curves at cutting ends; each has eye in point; the shaft is slightly oval to avoid turning in handle.

Fig. 4.—(Case I.) Showing silk ligament suspension of left humerus to acromion. Complete paralysis of left deltoid and partial paralysis of forearm and hand groups, "dangle arm" condition of limb. There was also extensive paralysis of thigh flexors, quadriceps, and hamstring muscles, and equinovalgus, in both limbs; duration, three and one half years.

An operation for the relief of this form of paralysis that complies with the requirements as stated was first proposed and performed by the writer about two years ago. This has since been abundantly verified and is briefly described as follows:

An incision, one inch long, is made on top of the acromion, beginning one half inch from its end; this extends to the bone along the line between the insertions of the trapezius and deltoid muscles. A suitable bone drill having an eye in its point (Fig. 3) is entered on the top of the acromion, one half inch from its tip, and pushed downward through the bone into the shoulder joint. The drill is next made to engage in the head of the humerus, on its external aspect, near the anatomical neck. It is pushed through the head of the humerus and greater tuberosity, to the base of the latter, emerging on its surface, external to the bicipital groove (Fig. 1). The drill is carried through the deltoid muscle to the skin, where a short incision is made, the muscle fibres also being separated for a short distance. Both ends of a piece of fine bronze wire are threaded into the drill eye, and on withdrawing the drill the wire is pulled through the bones, its loop and ends protruding. The drill is again inserted in the acromion, three fourths of an inch back of the first puncture, and a similar parallel tunnel made about three fourths of an inch at one side. The drill emerges in this instance on the posterior aspect of the greater tuberosity, is pushed through the deltoid and skin with the same detail, and a wire is drawn through the bones. Where the drills have penetrated the deltoid, a loop of wire is passed under that muscle, from puncture to puncture, using one of the curved drills for that purpose. A double strand of No. 14 or 16 paraffined silk tendon (prepared according to the formula of Lange) is attached to the wire loop and pulled through tunnel No. 1. The distal end is then dropped into the loop of wire passing under the deltoid, and pulled out through the opposite incision. Lastly the silk is pulled through tunnel No. 2, and the strands are tied separately on top of the acromion. The head of the humerus is pushed against the glenoid cavity, and the arm slightly abducted while the silk strands are being tied. The depression beneath the acromion at once disappears, and a moderate limitation of joint movement is secured. After suturing and dressing the incisions, the arm is bandaged to the side of the body with the forearm flexed, and is maintained in that position for about four weeks.

Reaction from the surgical trauma is slight and subsides in about ten days; all protection of the shoulder may be discarded by the fourth week. In the writer's case voluntary arm movements, such as could be effected by the scapular muscles, were then begun; the patients having been incapable of making such movements prior to the artificial suspension of the humerus. Three of the patients oper-

Fig. 5.—(Case I.) Forward movements of left arm which patient could make at two and one half and six months, respectively, after operation.

Fig. 6.—(Case I.) Lateral movement of arm patient was capable of making six months after operation.

Fig. 7.—(Case II.) Increased arm extension, five months after operation.

ated upon by this method had preserved function in the forearm and hand groups amounting to about one tenth of the normal. Complete disinclination existed to voluntary use of the affected hand, and when attempted the well hand was always brought into requisition to assist. By the end of the second month following the shoulder operation, these patients showed marked improvement in the functioning of the forearm and hand. At that time also a slight amount of compensatory extension and abduction of the arm could be performed (Figs. 4, 5, and 6).

No especial developing treatment for the muscles was employed, but the children were encouraged to play with toys and make efforts such as would require the use of both hands. By this plan alone effective movements gradually returned in the forearm and hand, eventually becoming quite free and well controlled (Figs. 7, 8). When these patients occupied the recumbent position these movements were much better executed (Figs. 9, 10, 11).

Systematic use was made of that posture for voluntarily exercising muscles, with the result that a better quality of control was quickly secured. The entire neglect of all treatment for these patients during the long periods following the initial disease suggests the probability of a still greater amount of recovered function, had these measures been applied during the earlier months of disability.

The expediency of employing this operation at an early date for deltoid paralysis, that, by every sign, will be extensive, prolonged, and disabling, is suggested by the modifying effect that has been obtained by its use for these patients whose treatment had been greatly delayed, and whose disability was very great.

A time, after the initial attack, suitable for the employment of this method in e. g., the knee, would be "late" for its use in the shoulder.

Weight bearing can be postponed and joints protected in the lower extremities, for longer periods with relatively less damage to the muscles than in the shoulder type of paralysis. In the latter arm weight at once exerts a detrimental effect that is consecutive to the paralysis, from which the muscles cannot be adequately protected by splints, even when combined with massage, etc.

From the writer's observation of the effect of this operation in the shoulder, it appears practicable to make use of it for protecting the paralyzed muscles, as early as the second or third month after the primary disturbance.

Procedures of a character similar to that described for deltoid paralysis, have been adapted by the writer to paralytic conditions involving almost every large joint and nearly every variety of poliomyelitis paralysis. The insertion of silk ligaments for reinforcement of these flail and weak joint conditions, has now been performed by the writer and his associates in nearly one hundred joints.

Infection has not occurred in any instance, and the ligaments have universally remained in the tissues. Cases are now available for examination where silk ligaments have been imbedded in joints and bones for nearly two years without causing disturbance. In one instance, owing to slight irritation from the knot, the silk was withdrawn from an ankle, ten months after insertion. The fibrous bands that invested the silk had sufficient strength to hold the foot in good position for weight bearing. Quite recently a remodeling operation for deformity of the tarsus, necessitated the removal of a No. 18 silk ligament which had been inserted in the ankle and tarsus a year previously. The silk was withdrawn with ease, essentially unchanged, and the scar tissue surrounding it appeared capable of furnishing a good quality of resistance, notwithstanding the removal of the silk core.

It is certain that these strands placed aseptically in bones and joints, become invested with fibrous tissue, and are effective restraining bands where supplementary support is required. The silk becomes inert in the tissues inclosing it, and shows practically no tendency to cut its way out. It is interesting in this connection to have demonstrated

Fig. 8.—(Case II.) Amount of abduction movement developed five months after operation.

that the artificial ligament may, if desired, be removed after a number of months, leaving scar tissue which has formed around it to support the joint.

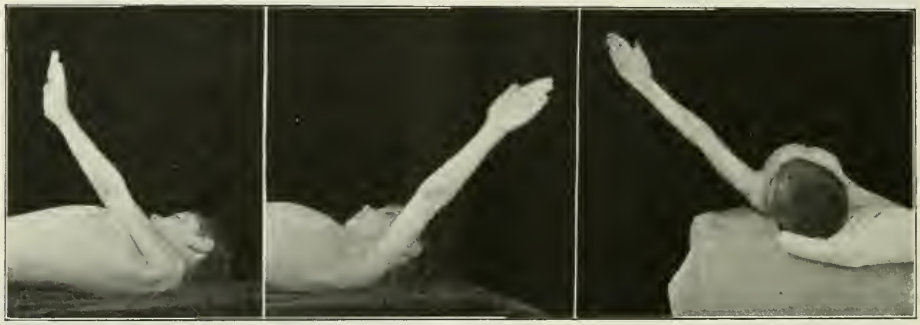
This knowledge removes apprehension of disturbance attending prolonged retention of silk ligaments in the tissues during their growth. The range and effectiveness of this procedure are increased by the knowledge that, if necessary, a joint may be additionally reinforced, after a suitable interval, without detriment to the benefits of a prior operation. It should be emphasized in this connection that joints are reinforced—not ankylosed; and that preservation of motion of any desired amount is easy of accomplishment.

The value of this plan of treatment for shoulder and arm paralysis, has been determined, not by the writer's cases alone, but also by those treated in the same manner by his associates; the total number at this time amounting to ten. Its freedom from interference with the processes making for recovery of the paralyzed muscles, its compliance with some of the chief requirements in treatment, its adaptability, and simplicity are some of its recommendations.

The suspension of the forearm in semiflexion, previously mentioned in this connection, has been performed only once by the writer, and in the following manner:

An incision, two inches long, is made midway on the back of the arm, beginning two and one half inches above the tip of the olecranon and reaching down to it. The fibres of the triceps muscle and tendon are separated, exposing the humerus for about one inch above the olecranon fossa (Fig. 2). The forearm is then flexed to a right angle and held in that position. With a nearly straight drill (Fig. 3) the humerus is penetrated about three fourths of an inch above the olecranon fossa, the drill being carried downward and forward, successively, through the shaft and trochlea of the humerus, elbow joint, floor of the greater sigmoid cavity of the ulna, and thence through the end of the ulna to its posterior surface. The drill emerges about at the apex of the triangular subcutaneous surface on the ulna—near the beginning of the posterior border of that bone. An incision is made through the skin at this site, two inches long and extending to the bone. The flexor digitorum muscle is separated from the ulna for a short distance, exposing its shaft, which is drilled through transversely from posterior to anterior surface. Loops of wire are pulled into these bone tunnels as the drill is withdrawn. At the place where the tunnel opens on the anterior of the ulna, the drill is pushed under the muscles close to the bone—tunneling under the soft tissues on the anterior surface of the ulna and humerus to a point opposite the first drill puncture in the humerus (Fig. 2). The muscle is there separated from the bone, so that a transverse tunnel may be drilled through the humerus from anterior to posterior surface. Wire loops are pulled into these tunnels when the drill is withdrawn.

The silk insert is placed first in the main tunnel extending through the elbow joint. The distal end is next drawn through the transverse tunnel in the ulna, and fastened by a hitch, so that it has a fixed bearing at that point. It is then pulled through the tunnel under the soft tissues; with the elbow flexed to the desired angle, the silk is drawn through the transverse tunnel in the humerus, and secured by a hitch; both free ends are then brought together and tied near the first puncture in the humerus (Fig. 2).



FIGS. 9, 10, 11.—(Case I.) Extension and abduction movements which patient could make lying on back, and which could not be done before operation. These movements are used as exercises for development of arm muscles and range action.

The incisions being sutured and dressed, the forearm should be carried in a sling with the elbow supported by a light splint for about six weeks. Protection of the elbow in the flexed posture should be prolonged, corresponding to the degree of limitation most desirable in a given case. With much loss of power in the forearm flexors, a maintained angle of about eighty degrees flexion will probably be the most useful. Some of this will subsequently be lost owing to the weight of the forearm and its continuous downward pull.

The instruments (Fig. 3) used for making tunnels through the bones differ from ordinary bone drills, being much longer, and having different curves to adapt them to the line of direction. Because of their curves they cannot be freely rotated within the bones, but require a pushing effort combined with a slight rotary movement. Their length is about seven inches, and the diameter of the shaft about five thirty-seconds of an inch. The shaft slides through the handle to permit the latter to be adjusted at any distance from the cutting point, for

the better control of movement and direction when in the tissues. The shaft of the drill and the lumen in the handle are oval, so that the handle cannot turn on the drill.

481 Delaware Avenue.

ANOMALIES IN CARDIAC RHYTHM.*

A Study of Their Significance.

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It is only within comparatively recent years that the cardiac arrhythmias have been classified on a systematic scientific basis. Before that time an irregular pulse was an irregular pulse, and it passed as such with most clinicians. Since the introduction of methods by which it is possible to analyze the action of the heart into the actions of the various chambers of the heart, a great deal has been learned about cardiac arrhythmia. The first important step came through the use of the polygraph, with which the auricular action could be studied from the jugular tracing, timed and checked by the simultaneous record of ventricular action taken either from the apex of the heart itself or from some peripheral artery, as the carotid, brachial, or radial. Later, the information obtained by the polygraph was expanded and illuminated in several very important particulars by the introduction of tracings obtained through variations in the electric potentiality of the heart muscle, in rest and action, with Einthoven's string galvanometer. These instruments of precision will certainly not come into very general use, but there is no reason why we should not all benefit by the story they have to tell, so that, with the fingers and with the ear, we can recognize in the vast majority of cases what type of irregularity we are dealing with, and know something of what it portends.

The least significant type of cardiac irregularity, known as sinus arrhythmia, or youthful irregularity (Fig. 1), is actually a mere exaggeration of

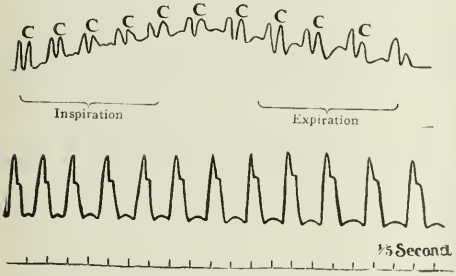

Fig. 1.—Sinus arrhythmia, showing variability of pulse with respiratory changes. Upper tracing; jugular, lower tracing brachial.

certain normal variations in the heart's rate. This is seen, for instance, in individuals in whom, with the varying phases of respiration, there is an alternate acceleration and slowing of the pulse rate. In some people this is so marked that even during ordinary quiet breathing there is a continual change in the pulse, giving rise to the impression of a very irregular action, but it will usually be noted that the changes correspond to definite periods of the respiratory cycle, the slowing of the pulse occurring during expiration, as a rule. This is followed during inspiration with a somewhat hurried action. Sometimes the opposite occurs. The changes are gradual rather than sudden, and it is usually the rate rather than the volume of the pulse that changes. A normal individual will often show this reaction when taking deep breaths, and it is easy to see that with a long, full inspiration, when a large amount of blood is aspirated into the chest cavity from the belly and from the large venous trunks of other nearby regions, necessitating compensatory vasomotor changes, and when the heart is acting under unusual conditions of intrathoracic pressure, there should be some variation in the heart's action. Swallowing, and certain peripheral stimuli, as irritation of the mucous membrane of the nasal septum, etc., will sometimes elicit sinus irregularities.

An analysis of tracings taken from such types of arrhythmia shows that each contraction originates in its normal position, in the sinus tissue near the mouths of the great veins, and spreads normally down through the auricles to the ventricles; in short, that the contractions are normal, merely varying in the time of their occurrence. That this variability in the time of occurrence is the result of purely nervous influences may be demonstrated by the administration of atropine, which, by paralyzing the vagus endings in the heart, causes the arrhythmia to disappear (Dehio). Thus a hypodermic injection of atropine is sometimes of considerable diagnostic aid. The administration of atropine as a therapeutic measure to control the arrhythmia is quite unnecessary, as the arrhythmia itself is of no moment. This type of irregularity is usually found in young, neurotic individuals who present other evidences of a nervous temperament and lively reflexes, and as an indication for treatment, it takes the same position as these other evidences. It sometimes occurs in the course of some acute infection, as grippe or pneumonia, but even then it signifies nervous instability rather than cardiac involvement, and should occasion no alarm (W. B. James). The heart itself requires no individual treatment, and, in fact, any emphasis on the irregularity or possible heart disease is distinctly harmful, as it is very apt to lead to morbid ideas and more pronounced nervous disturbances. If any treatment is indicated, sources of reflex irritation should be sought for and corrected, while the whole nervous tone should receive consideration.

The next type of irregularity to be considered is the extra systole (Fig. 2). This does indicate definate cardiac involvement, though by no means always irrevocable damage. Perhaps the commonest example of this phenomenon corresponds to what was at one time spoken of as the dropping of a beat. In feeling the pulse at the wrist it will be noticed that every once in a while there is a long pause, as though a heart beat had been omit-

*Read before the Brooklyn Medical Association, December 11, 1912.

ted. If one listens carefully at the heart it will be observed that actually just the opposite has occurred. A premature beat has been thrown in shortly after the occurrence of a normal beat. The extra sound, or sounds, as it may be single or dou-

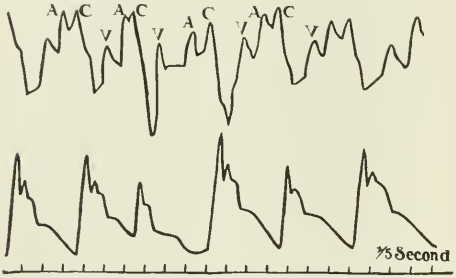

Fig. 2.—Extrasystole. The ventricle has contracted prematurely, but after the normally occurring auricular contraction. From an elderly woman with cardiosclerosis and mitral regurgitation, as the beat was beginning to fail. The extra systoles disappeared as the patient improved. In the jugular tracings the "a" wave is due to the auricular contraction and the "c" wave to the ventricular contraction, the "v" wave expressing the passive filling up of the vein after cardiac systole. Upper tracing, jugular; lower tracing, brachial.

ble, are thrown in so quickly after the normal sounds that it may be difficult to catch its significance, but when one is familiar with it, it is quite characteristic. The pulse wave of the extra beat may be so insignificant that it does not reach as far as the wrist, and in fact the contraction may be so weak that the aortic valve is not even opened. In this event, only one extra sound will be heard at the heart. The extra beat is usually followed by a compensatory pause that gives the long interval which was formerly supposed to indicate a skipped beat, and the next beat is often unusually violent, so that it may be felt by the patient as a thump in the chest. Sometimes a premature contraction occurs after each normal beat, and both can usually be felt at the wrist, giving the impression of a large beat and a small beat followed by a pause and then a repetition of this cycle. This is the familiar pulsus bigeminus (Fig. 3). The pul-

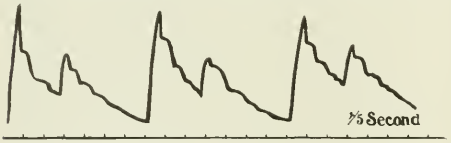

Fig. 3.—Pulsus bigeminus (brachial tracing). From a patient under full digitalis influence.

sus trigeminus is produced by the occurrence of two extra beats after every normal beat. These extra beats are shown by tracings to be explained by the fact that the cardiac contraction starts at some abnormal part of the heart, instead of in the sinus region where it should start. If the contraction starts in the ventricle the evidence of the preceding auricular contraction is lacking in the tracing. This is known as the ventricular extrasystole. It is the commonest variety, and it is in this form that the compensatory pause follows, as the ventricle having just contracted, refuses to respond to the aftercoming auricular beat and waits for the succeeding stimulus. It is therefore evident that an extrasystole indicates an overirritability of some part of the heart muscle (every part of the muscle being capable of originating a contraction if the stimulus is strong enough), but the cause of the overirritability and the immediate occasion of its manifestation are still matters of uncertainty. Clinically extrasystoles are most often met with in individuals whose myocardium is at least open to suspicion on other grounds as well, as in valvular disease and cardiac sclerosis, and it is reasonable to suppose that there may be structural changes in the heart which account for the irritability, and such changes are often found post mortem. In fact, some authors maintain that they never occur unless the heart muscle is damaged. Friedrich Mueller, who takes this position, makes the exception, however, of certain neurotic individuals who are prone to sudden and marked changes in blood pressure, believing that the extrasystoles may be thrown in during a sudden rise, perhaps as an additional effort to meet the extra demands upon the heart. On the other hand, extrasystoles certainly do occur at times in individuals with no suspicion of heart disease, and cases are recorded where they have occurred for many years without any other symptom. The most reasonable explanation for this is the presence of some insignificant, nonprogressive lesion in the myocardium, as a little scar left by some long forgotten or overlooked acute condition, or even some developmental defect. It is sometimes found possible to control this irregularity in apparently healthy hearts by removing such toxic causes as tobacco, tea, or coffee, and it seems fair to assume, for the present at least, that in these temporary cases, while it may be granted that the cause was operative on the heart muscle itself, there is no necessity for presupposing permanent organic change. As a diagnostic or prognostic feature, I believe this phenomenon is of very much less importance than other factors. Where other evidence of a damaged heart is lacking, and by this I mean not the mere presence of a murmur, but any reason to lead one to suspect some involvement of the myocardium, it should cause no anxiety. In the presence of an acute infection, or shortly after an acute infection, extrasystoles should obviously suggest involvement of the heart, while in the chronic states they are of

Fig. 4.—Auricular fibrillation. From a patient suffering with chronic nephritis, arteriosclerosis, and cardiosclerosis, the heart having dilated and compensation being broken. The patient died three days after the tracing was taken. (From the service of Dr. Frank E. West, Long Island College Hospital.)

subordinate significance, except in those cases where they are so frequent as to interfere with an adequate circulation.

The most serious form of arrhythmia has been known by many names, as absolute or perpetual arrhythmia, disorderly rhythm, delirium cordis, nodal rhythm, etc., (Fig. 4). It is readily recognized, as the beats follow each other in most haphazard fashion, large and small, long and short, all jumbled in together. The history of the study of this problem and its final solution forms an interesting chapter in medical investigation. Mackenzie thought he had solved the problem when he noted that the auricular waves were absent in the jugular tracings and put it down to paralysis of the auricles. Later he found that many of these hearts showed at autopsy a hypertrophy of the auricles, and as this was inconsistent with his theory of auricular paralysis, he evolved the ingenious hypothesis that auricles and ventricles were beating in unison as a result of an irritable auriculoventricular node (nodal rhythm). He thought that the contraction, starting between the auricles and ventricles, would reach them both at the same time, as it actually does when the node *is* the seat of origin of a contraction. There seemed much to support Mackenzie's theory, but it was finally disproved by Thomas Lewis and others, who showed largely by means of electrocardiographic records, that the condition is really one of auricular fibrillation. The incoordinated vermiform contractions of all the fibres of the auricles shower the ventricles with innumerable impulses to contract, and the ventricles obligingly respond to all that they can handle, contracting with all available force every time a strong enough impulse comes along. The rate is usually rapid and the sum of the contractions usually insufficient to meet the requirements of a normal circulation. The condition is found only in hearts with a damaged myocardium, and is seen most commonly in chronic valvular disease and myocarditis. A large proportion of cases of severe broken compensation present this picture. The condition is not infrequently temporary and it is not certain that it necessarily indicates a permanently damaged myocardium. I have seen auricular fibrillation come on during an attack of pneumonia and disappear completely with the subsidence of the acute infection, and it does not seem impossible that, the toxic cause having passed, such a heart might not ultimately regain its normal condition. However, it usually means serious permanent damage. The fibrillation is apt to recur, and even though it continues for years, as I have seen it do, any extra strain on the heart is apt to prove its fundamental weakness by causing a breakdown.

The chief importance of auricular fibrillation from a therapeutic standpoint is the remarkably beneficial effect which digitalis exerts in this condition. This is brought about largely through an inhibition of conductivity probably through vagal influence, so that many of the annoying stimuli are blocked at the auriculoventricular junction, and the ventricle is allowed to work at a much slower and therefore more effective rate. Furthermore, I see no reason for discarding the old teaching that with a slower, more forceful ventricular beat, the coronary circulation itself is improved by better filling of the arteries and more complete squeezing out of the veins, so that the myocardium is supplied with more nutriment and oxygen and is more thoroughly relieved of its waste products.

Heart block may or may not present an irregular pulse. Stokes-Adams syndrome, with its temporary or permanent bradycardia, and the associated syncope or epileptiform attacks, is comparatively easy of recognition (Fig. 5). The condition is at once

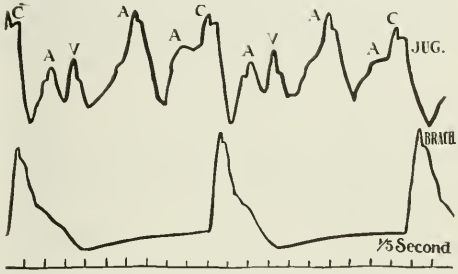

Fig. 5.—Partial heart block. Ventricular rate 26.51 a minute. Auricular rate 79.53 a minute. Man of forty-four years. Illness of three weeks' duration, characterized by intense vertigo and dyspnea on exertion. Patient also suffering from phthisis. Left the hospital and died three weeks later. (From the service of Dr. John A. McCorkle, Long Island College Hospital.)

suggested by the slow pulse and can be verified by inspection of the jugular, which is seen to be beating at a faster rate than are the arteries. Milder forms of the condition are sometimes difficult to identify without the aid of tracings, as where the ventricle lags behind the auricle with ever decreasing promptitude until it fails to respond to one auricular suggestion, when it will brace up and begin all over again, only to repeat the process (Fig. 6).

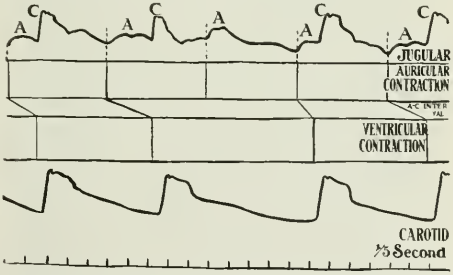

Fig. 6.—Partial heart block. From a Chinese sailor who could speak no English, and whose only complaint seemed to be a pain in the knee. The block disappeared after a few days' rest in bed and no evidence of cardiac trouble could then be observed. Wassermann reaction negative. (From the service of Dr. Gordon R. Hall, Long Island College Hospital.)

Even here the diagnosis may often be made by careful inspection and palpation. Such conditions, when coming on spontaneously, are apt to progress to the severer forms, but not necessarily so. Partial block may be induced at times by large doses of digitalis, and Lewis has shown that asphyxia will produce heart block, which completely and permanently disappears with the recovery from asphyxia. Lesions of the central nervous system possibly rarely cause the condition. In short, while

it nearly always indicates myocardial damage, it is quite possible that temporary toxic or other factors may at times be responsible for the block.

The pulsus alternans (Fig. 7) consists of a se-

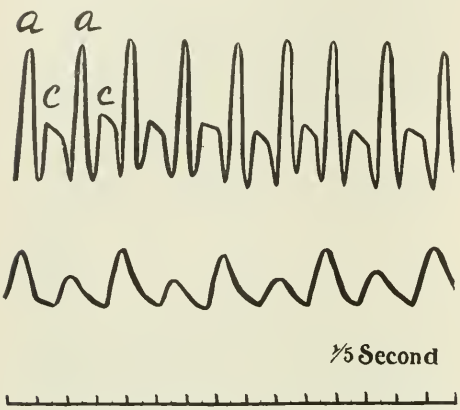

FIG. 7.—Pulsus alternans, from a case of paroxysmal tachycardia, taken during a paroxysm. Upper tracing, jugular; lower tracing brachial.

ries of alternating large and small beats, the time being regular, which obviously should be distinguished from the pulsus bigeminus, where each beat is followed by a pause. It is due to an insufficiency of the contractile power of the heart and indicates fundamental heart weakness, except, perhaps, in the rapid action of paroxysmal tachycardia, where it often occurs, and in this case may be due to a disproportion between the excessive rate and the ability of the heart properly to respond (Hirschfelder).

Paroxysmal tachycardia (Fig. 8) is still one of

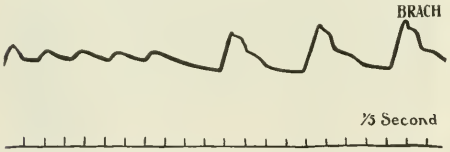

FIG. 8.—Paroxysmal tachycardia. Tracing shows the abrupt end of a paroxysm with the resumption of the normal rate, the pulse dropping from 177 to 78 a minute. The patient had been subject to such attacks for many years.

the mysteries. While we may not know what causes it or how to stop it, its recognition is of importance. Otherwise it is disquieting and puzzling to encounter a patient with a pulse of two hundred or more, who does not look sick and probably does not feel sick. The attack begins with absolute abruptness, the rate usually jumping to some multiple of the previous rate or nearly so. It usually lasts from a few minutes to a few hours and stops with the same abruptness with which it began. While the patient may be conscious of the rapid action and may be frightened, there is practically no discomfort, and the heart may show no other signs of disease. A prolonged attack, particularly where there is myocardial degeneration, may bring on the ordinary signs of heart failure and even death, but such occurrences are rare, and the attacks are apt to recur for years without any serious consequence, and may disappear altogether. However, a person subject to such attacks should certainly avoid any undue strain on the heart, as some change in the myocardium is not improbably present.

383 CLINTON STREET, BROOKLYN.

THE TRAVELS OF A NAIL.

By GEORGE ROSENBAUM, M. D.,
Philadelphia.

Many and varied in character are the objects that children swallow, and in the detection of these objects lies a strong claim for the efficiency and popularity of the x rays. The writer wishes to present the following case, which is of more than passing interest:

CASE. D. P., two and one half years of age, a small and poorly nourished child, swallowed a long wire nail on December 16, 1912. Shortly after this he vomited and the vomitus was tinged with blood. The mother gave the baby purgatives and tried the usual home remedies, but

FIG. 1.—This was the first picture taken and shows the nail still in the stomach, four days after being swallowed. The point is toward the pylorus and the head to the fundus.

with no result. Two days later, after a dose of castor oil, the child suffered sever abdominal pain and became cyanotic for a short time.

On December 20th, four days after deglutition of the nail, the child was brought to the hospital and referred to me for x ray pictures. The temperature was 99° F., pulse 116, and respirations 28. No tenderness or rigidity of abdomen on palpation.

A series of six pictures were taken, the first on Decem-

FIG. 2.—Taken December 26, 1912; shows the nail low down on the right side, in the cecum. The child had received small doses of bismuth subcarbonate for skiagraphic purposes. The small dark mass below the cardiac shadow shows the position of the stomach; the large dark mass in the pelvis outlines the rectum.

ber 20th and the last on December 29th; the day the nail was passed from the rectum.

All told, the nail was in the alimentary tract fourteen days. Four days it lodged in the stomach and six days were required to complete the journey through the small intestine, and the remaining four days for its passage through the large intestine.

The child had daily evacuations during this period, and, while it was quite restless during its stay in the ward, it was in no sense ill. The temperature never rose above normal. A few hours after the nail was passed the child was taken home.

MOUNT SINAI HOSPITAL.

PARAURETHRÆ.

By J. LEON HERMAN, M. D.,
Philadelphia.

Congenital doubling of the male urethra does not occur in the absence of double penis. Double urethra in the female has been observed in association with double bladder by Pean, Wolfer, and Colzi, quoted by Lerche (1) and Schwartz (2), and Furst (3) reports a case of double female urethra unassociated with any malformation of the urinary bladder. The latter is the only instance of this abnormality in the literature, the authenticity of which has gone unchallenged. The possibility of such associated congenital abnormalities of the female bladder and urethra is explained by the common embryological origin of these structures from the allantocloacal portion of the fetus, any doubling of which, such as might be produced by the formation of a frontally placed fold, would lead to the condition above described. That portion of the male urethra between the internal vesical sphincter and the openings of the ejaculatory ducts, is derived from the corresponding fetal structures that produce the entire female urethra, with which this portion is therefore analogous. The remaining portion of the male urethra is derived from the genital tubercle in association with the development of the external genitalia (4). Reduplication of these two entirely distinct portions of the male urethra has never occurred unassociated with doubling of the penis.

Instances of double penis are, however, not uncommon in medical writings, and it is of interest to recall that the devotees of Priapus in Pompeii and Herculaneum have preserved images of this abnormality to us in their sculpturings and paintings (5). Bas reliefs in some of the old buildings of France are said to illustrate doubling and even tripling of the Phallic (6) emblem of a procreative deity.

It is not uncommon to find blind accessory canals in the penis, and Casper (7), in considering the subject of double urethra, concludes that the cases so reported are merely instances of such canals or congenital fistulæ.

Himmel (8) holds the same opinion notwithstanding his observation of a case closely simulating a true double urethra. In Himmel's case, a sound was passed through the normal meatus into the opening of an abnormal canal which ran parallel with and above the urethra to the symphysis pubis. From the bladder another canal was found passing to the symphysis pubis and communicating with the former by a narrow opening. A fold in the region of the bladder neck caused the obstruction, and in a

Rosenbaum: Travels of a Nail.

FIG. 3.—Taken December 27th at 11 a. m.; shows the nail at the hepatic flexure of the colon, having ascended from the cecum in twenty-four hours.

Rosenbaum: Travels of a Nail.

FIG. 4.—Taken also December 27th, but at 9 p. m.. In ten hours the nail had moved but a few inches from the hepatic flexure to the transverse colon.

careful analysis of the case the author explains it on the theory of a congenital doubling of the allantois or the development of a frontally placed wall dividing this fetal structure. He does not look

Rosenbaum: Travels of a Nail.

FIG. 5.—Taken December 28th at 11 a. m.; shows the nail in the sigmoid.

upon the malformation as a true *urethra duplex*. Vidal (9) subjects the reported cases to critical review and decides that doubling of the male urethra does not occur. Thiele (10) doubts the authenticity of von Cruveilheir's case (11) and suggests that the abnormal canal may have been a nonfunctioning dorsal vein. Kauffmann (12) considers these cases on the theory of congenital fistulæ and reviews at length the cases of Pribram, Luschka, Marchal, Picardat, and Perkowsky. The abnormal canals opened in these instances on the dorsum of the penis, either on the hind wall of the glans, or on

Rosenbaum: Travels of a Nail.

FIG. 6.—Taken December 29th at noon; shows the nail in the rectum. It was passed a few hours later, imbedded in fecal matter, and was found to be 2¾ inches long.

the posterior third of the shaft. Luschka's case came to autopsy and is of especial interest. An accessory canal extended from the mid dorsum of the penis in the posterior third of its shaft, to a point two cm. anterior to the pubic arch. A glandular structure placed directly over the tunica albuginea on the dorsum of the organ, communicated with the canal by means of four ducts. The posterior end of the gland was connected with the anterior bladder wall by a stout elastic sheath running in front of the prostatic urethra. Luschka considers the gland to be a dislocated anterior lobe of the prostate gland, a view which Dollinger (13) seems to have confirmed.

In the cases of Pribram and Picardat, shred bearing fluid came from the canals during the ejacula-

tion of semen, although this fluid was not examined microscopically nor was any glandular tissue found to indicate its origin. Martin (14) reports a typical case of dorsal paraurethra through which a sound could be passed to the symphysis pubis. In the older literature we find cases of double urethra described by Andreas Vesalius and Hildanus, quoted by Stieda (15). A student of Padua is said by Vesalius to have had two channels opening on the glans penis, one serving to convey urine and the other semen. The author quotes an Arabian physician who observed a case of three canals, one serving to pass urine, a second semen, and the third prostatic fluid. Hildanus credits Nature with having given a boy of Cologne a double urethra, through both of which the "urine passed without difficulty." These cases cannot be considered double urethræ, and although they incite admiration of the acumen of observation of these seventeenth century physicians, they lack the evidence of precise methods of diagnosis, the urethroscope, cystoscope, etc., which the intervening centuries have given to surgery. Lejar's (16) collection of cases from the time of Aristotle adds nothing of value and is, in many instances, subject to the foregoing criticism. It is evident, as Stieda aptly remarks, how difficult it is properly to group the reported cases of accessory canals of the penis in view of the diverse opinions as to their origin and the incompleteness of study to which they, especially the older cases, have been subjected.

The subject is elucidated by considering all such channels as developmental errors, and if we accept the term paraurethræ as Pontoppidon (17) first suggested for these structures in the male, it must be done with the reservation that they are entirely different from the normally occurring paraurethral ducts of the female first described by Krause (18) in an anatomical consideration of the urethra, and later by Guerin (19) in relation to urethritis externa. Agreeing with Zuckerkandl (20), Stahr (21), and others in viewing these cases in the light of defective development, we cannot improve on the classification of Taruffi (22), who divides them into four groups, viz.:

1. Seminiferous canals. This rare type illustrated by the cases of Vesalius, Luschka, and probably also of Pribram and Picardat, is considered to be the result of abberration (congenital) of the ducts of the anterior lobe of the prostate gland.

2. Canals ending blindly. A. Opening on the surface of the penis. B. Opening into the urethra.

Group A. This group includes all accessory canals opening on the surface of the penis and with no urethral communication. They are often found with openings near the meatus and on the under surface in relation with hypospadias, more rarely on the dorsum. The latter is typically shown in a case recently reported by Hensel, which is similar to the one we describe.

Group B. Canals opening into the urethra but ending blindly in the periurethral tissue. The ducts of normal urethral glands are included in this group, but in addition to these, there occur others which are embryological defects.

3. Uriniferous canals. These are cases presenting accessory channels in free communication at variable points with the urethra and opening on the surface of the penis. Since true double urethra does not occur the case of Hildanus must be placed in this group. G. Marion (24) has recently reported a typical example.

4. Fistulæ, the result of cloacal defects. Bardeleben (25) has reported a series of cases to illustrate double urethra, but they are examples of congenital fistulæ, urethroperineal, vesicoperineal, etc., and should be considered as accessory canals resulting from cloacal defects rather than true examples of urethra duplex.

Canals opening on the surface of the penis, but ending blindly, are developmental defects probably in close embryological relationship if on the ventrum, with hypospadias, if on the dorsum with epispadias. The ventral canals may be explained by the formation of a horizontal fold dividing the primitive penile urethra. The defects on the dorsum of

FIG. 1.—Showing congenital doubling of the male urethra.

the organ of associated allantocloacal and external genital origin, as illustrated by the case of Himmel, admit of no satisfactory embryological explanation. Klebs, quoted by Kauffmann, advances the theory that dorsal channels are the remains of spontaneously healed epispadias formations leaving a mucous lined canal in the centre of a scar. Kauffmann and Stieda have analyzed a voluminous and contradictory literature of this subject and rightly conclude that any embryological explanation is to be viewed in the light of mere conjecture. Instances of dorsally placed accessory canals of the penis are rare in comparison with those ventrally placed. The cases above referred to are taken from the literature prior to 1905. Hensel (23) has recently described a case in which an abnormal canal opened on the glans penis directly above the normal meatus. The opening measured one half cm. in diameter and the canal measured eighteen cm. in length, and ended blindly under the symphysis pubis. There

was no urethral communication as determined by the injection of methylene blue and the passage of sounds. A complicating infection was destroyed by injections of silver nitrate solutions and the other states that radical treatment is entirely out of the question. The foregoing is very similar to a case which we report from the genitourinary dispensary of the Hospital of the University of Pennsylvania with the kind permission of Doctor Siter.

CASE. A Jamaican negro, aged twenty-four years, came to the hospital in July, 1909. Examination showed the presence of a "double urethra." The accessory canal extended from a point in the glans penis just above the normal meatus, the two being separated by a very thin plate of tissue, to the mid point of the root of the penis, traversing the body of the organ diagonally, becoming more superficial posteriorly. An infection of the urethra (gonorrheal) yielded readily to treatment, but suffered repeated exacerbations from reinfection from the abnormal canal, which latter resisted all efforts to control. At the suggestion of Dr. Alexander Uhle, a special syringe was made with a cannula No. 7 F. and 18 cm. in length for the purpose of injecting the deeper parts of the canal. Various drugs were used regularly and over a long period of time, but without any improvement in the condition. After an absence of several months the patient returned in January, 1912, complaining of pain and swelling of the penis with discharge from the abnormal canal. Examination showed a cellulitis of the penis especially marked near the root associated with a right sided inguinal adenitis (nonsuppurating). Seropurulent gonococci laden discharge came from the "upper meatus." After several weeks of treatment with injections and local applications without any improvement, a cannula was passed into the canal and the latter opened over the symphysis pubis, cocaine anesthesia was used. (See Fig. 1.)

The canal was found under the deep layer of the superficial fascia (suspensory ligament) and passed downward in front of the symphysis and apparently ended blindly. A silkworm gut ligature was threaded into the cannula and the latter removed, leaving the ligature for drainage. This was in turn removed in five days. Through and through irrigations, first with emulsion of silver iodide five per cent. and later with solutions of protargol and silver nitrate in increasing strengths, controlled the infection, and the cellulitis and adenitis rapidly subsided. Four weeks after the operation, the patient had intercourse. At this time he was clinically well, and the drainage opening was practically healed. He remained free of symptoms and apparently well. We had intended making cystoscopic and urethroscopic examinations to determine the relationship of the canal to the bladder and urethra, but the patient unfortunately disappeared before this was considered advisable. Injections of colored fluids failed to show any communication between them. We did not find any tissue resembling glands (prostate) in the dissection, and the patient stated that he had never noticed any fluid coming from the upper opening, either on ejaculation or on urination. This is a case of unusually long paraurethral canal of uncertain embryological origin but one in which it is by no means justifiable to rule out the possibility of prostatic fistula.

TREATMENT.

Accessory canals of the penis, except fistulæ, the result of cloacal defects and urinary fistulæ of the penile urethra, as a rule demand no treatment if uncomplicated by a Neisserian or other infection. Infection of the urethra is usually, but not always, associated with infection of the abnormal canal and either may be the source of infection to the other. In considering the question of infection of paraurethræ and its treatment, Keyes (26), Swinburne (27), Churchman (28), and others advise against surgical measures on account of the danger of systemic gonorrhea. They suggest various antiseptic, astringent, and cauterizing drugs, but state that marked difficulty is experienced in destroying the infection by these measures. Perkowsky opened the canal widely in his case and sewed the skin edges to the edges of the mucosa with cauterization of a blind ending portion of the dorsal paraurethra. He reports a good result and makes no mention of systemic effects. Such a procedure as Perkowsky employed would have been manifestly impracticable in our case on account of the diagonal course of the canal.

We believe that the case of Perkowsky and our own are the only reported instances of the employment of surgical measures for the relief of infected dorsal paraurethræ and in each instance with a very favorable result.

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405 ROGER WILLIAMS BUILDING.

FIBROMYOMA UTERI.*

Occurrence; Complications; Necessity for Operation.

BY WILLIAM P. HEALY, M. D.,
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In selecting the topic of uterine fibromyomata I have been guided by the idea that the majority of my readers are engaged in active general practice and are not specialists, and it is my wish to bring out as vividly as I can the great frequency of fibroid tumors of the uterus. I am doing this in order to impress upon the physician in general practice the urgent necessity for adding a routine bimanual examination of the pelvic organs in women to his usual physical examination in these cases. By doing this two ends will be achieved, we recognize the presence of these benign growths frequently before any special symptoms or complications have developed, and we occasionally discover a carcinoma of the cervix in an early stage.

FREQUENCY.

Statistics on the probable occurrence of this disease are rather difficult to obtain. Efforts to collect reliable figures have usually been based upon the result of post mortem findings. While these figures vary greatly with different writers, they all

*Read before the Medical Association of the Greater City of New York, February 3, 1913.

indicate that uterine fibromyomata are exceedingly common. According to a number of these men whose individual estimates are based upon the result of autopsies, from fourteen to twenty per cent. of women over thirty-five years old have uterine fibromyomata.

Dr. Edward J. Ill has looked up this subject in various hospitals all over the world, and the number of fibroid tumors found on the post mortem table in women over thirty-five years old was between four and eight per cent. according to his statistics.

The census of 1910 for Greater New York gives us a population of 750,000 women between the ages of thirty and fifty-four years inclusive; taking the lowest estimate of four per cent. according to Doctor Ill's figures, we had in 1910 in Greater New York 30,000 women with fibroid tumors of the uterus, and in the borough of the Bronx there must be to-day about 4,000 cases.

AGE.

The average age at which patients present themselves for treatment in my experience is about thirty-seven years. Post mortem statistics tend to support the belief that the liability to fibromyomata increases markedly with advancing years. They are infrequent before the thirtieth year.

Clinical experience makes it evident that these growths tend to arise during the decline in sexual activity of the individual, at a time when childbearing is becoming infrequent. There is therefore a tendency on the part of investigators to ascribe an intimate association between the causes which determine the development of these tumors and the waning of the reproductive activity.

The majority of these women have had practically normal menstrual periods and seem to have enjoyed good health prior to the onset of the disease.

The number of children born to these women is much below the average. In a study of forty cases under my personal observation during the past year I found that thirty-one were married and that only seventeen of these thirty-one married women gave birth to full term children and that the total number of full term children in the seventeen families was only twenty-six. Five additional women became pregnant, but miscarried, making a total of twenty-two married women out of thirty-one marriages becoming pregnant, these pregnancies resulting in twenty-six full term children and forty miscarriages.

Eleven of these seventeen marriages were instances of one child sterility, that is having given birth to one full term child, these patients either subsequently miscarried or never became pregnant again.

It is thus evident that women with these growths are remarkably unproductive, the thirty-one marriages in this list resulting in the birth of but twenty-six children.

W. Roger Williams, in his book on uterine tumors, states that the proportion of myomatous women who are sterile has been estimated at over thirty per cent., whereas among married women of the general population only about ten per cent. are sterile.

He also says that "among the married, myomata are of more frequent occurrence in the sterile than in those who bear children." Then he asserts that a study of the question of marriage, fertility, etc., in myomatous women produces facts which demonstrate "that the suppression of maternity and diminution of the natural fertility, however caused, whether by celibacy, late marriage, artificially induced sterility, etc., are among the most important factors in the genesis of these tumors."

He believes that maternity and childbearing are the great enemies of myomata. The rationale of this seems to be that the nutrient material meant for the formation of a new individual, when not thus employed, so stimulates certain elements in the uterine musculature as to cause excessive local proliferations, which eventuate in myomata.

My personal opinion is that the facts do not support this theory; for example, Case VIII in my series. The patient, who was only thirty-two years old, and had large multiple fibromyomatous tumors, was the mother of three children and had in addition four miscarriages. My belief is that these women would have borne more children were it not for the presence of the tumors, and that the so called one child sterility is in most instances a result of changes in the endometrium caused by the presence of submucous or interstitial myomata.

SYMPTOMATOLOGY.

Hemorrhage, abdominal tumor, pain, disturbances of micturition are, in the order named, the chief symptoms presented by these patients.

COMPLICATIONS.

These are many and varied. First, in the uterus itself, we have all kinds and degrees of alteration in size and shape according to the number, location, and size of the growths. With small submucous or interstitial tumors we frequently find marked hypertrophy of the uterine musculature.

TUBAL COMPLICATIONS.

These consist of chronic inflammation with thickening of the tubes and occlusions of the fimbriated end, leading to the development of hydrosalpinx, hematosalpinx, or pyosalpinx, these conditions frequently being bilateral.

Of these tubal complications pyosalpinx is the most serious, not only in itself, but because it is often associated with degenerating necrotic fibromyomata, and in addition there has usually been considerable involvement of the neighboring intestines, omentum, and pelvic wall in exudate, and the formation of firm adhesions adding considerably to the danger of the operation.

The ovaries are always more or less diseased. The commonest lesion is probably chronic, cystic, and interstitial oophoritis, that is, the ovaries are two or three times the normal size and seem to contain numerous small follicles or cysts. Ovarian cysts of considerable size, single or bilateral, are also met with frequently.

PRESSURE COMPLICATIONS.

The importance of these, according to my experience, has been exaggerated. The patient may complain of a sense of weight and pressure in the pelvis, of frequent and painful micturition, or of re-

tention of urine, and she is probably constipated, but, as regards any actual damage to the surrounding structures by these tumors, it never occurs unless there has been some inflammatory disturbance. As a matter of fact, we are more often amazed than otherwise by the lack of symptoms in the presence of a pelvis choked with fibromyomatous tumors, these patients frequently presenting themselves with symptoms of but few weeks' duration.

CONSTITUTIONAL COMPLICATIONS.

Considerably more than half the women who come under my observation with fibromyomatous tumors are below the average in general health. They tend to be pale, short of breath, nervous, suffering from indigestion, and a blood examination shows a varying degree of secondary anemia. They have headaches and cardiac palpitation and their general nutrition is considerably disturbed. Is this condition the outcome, as some writers think, of "a general toxemia caused by excrementitious products derived from the tumor, finding their way into the general circulation in quantities too great to be quickly eliminated?"

I do not think so. On the contrary, I believe it is more reasonable to regard the condition as a result of the constant drain on the patient's vitality brought about by the effort to replace the blood lost by hemorrhoge. For practically all the patients with cachexia, in the absence of inflammatory or other complications of the fibroids, have been suffering from more or less excessive bleeding.

CARDIAC COMPLICATIONS.

We hear and read a great deal to-day about the occurrence and importance of cardiac complication in cases of fibromyomatous disease. That pathological changes in the heart do occur in association with these tumors is certain, and that such changes when present are important and their recognition essential, must be admitted.

Is the percentage of cases with cardiac complications greater than in the same number of women without these tumors, and if so what is the nature of the cardiac lesion and the method of its production?

In order to throw some light upon this question I have reviewed the cardiac findings in 100 cases from the gynecological ward of the Roosevelt Hospital, service of Dr. Howard C. Taylor. These cases have been selected without regard to the pathological condition for which they were under treatment, the only restriction being that of age, no patient having been selected who was under thirty years of age, in order to make them correspond as closely as possible with fibromyomatous cases in this particular.

The result is rather interesting. In the 100 cases there were twenty-two in which heart murmurs were recorded, all the others being definitely recorded as normal or negative. Of these twenty-two cases eleven were instances of fibromyoma uteri, and the total number of cases of fibroid tumors in the list was only nineteen. Thus we had eleven instances of heart murmurs in nineteen cases of fibromyoma uteri against eleven instances of heart murmurs in eighty-one other cases. This suggests that in a large series of cases heart murmurs would be four times more frequent in those with fibromyoma than in all other cases. The heart in six of the fibroid cases was enlarged and the murmurs were of the mitral regurgitant type.

In my own series of forty cases there were thirty-eight in which the cardiac condition was definitely noted, and twelve of these had systolic murmurs to the left of the sternum and loudest at the apex. In only three was the heart enlarged and the murmur transmitted into the axilla.

From the foregoing statements it seems to me that we are justified in saying that fibromyomata in a certain relatively large proportion of cases tend to disturb cardiac stability. As to the nature of the cardiac lesion, I believe it to be entirely myocardial, and I look upon it as a fibrosis or fatty degeneration due to the secondary anemia present. I believe that the condition, if not of too long standing, will entirely clear up with the removal of the tumors and the improvement of the patient's general health.

MALIGNANT CHANGES.

Cancer, as we all know, does not develop in or from fibroids; it may, however, develop from the mucous membrane of a uterus which contains fibromyomata, but there is no reason for assuming that either condition has any relationship with the other except that of coincidence. Kelly says that in 1,000 cases of myoma operated on in his clinic, there were twelve associated with cancer of the body of the uterus and sixteen with cancer of the cervix.

Sarcoma, however, does undoubtedly develop in fibromyomata and probably most of the cases of sarcoma of the body of the uterus have their origin in submucous or interstitial fibroids. Sarcoma, however, is exceedingly rare.

NECESSITY FOR OPERATION.

To-day, a physician in seeking advice on this question is confronted by two views: The one, radical in character, which states that these tumors though benign in their structure are malignant in their possibilities for trouble and in general should be removed promptly when recognized; the other, more conservative in tone, which takes the position that each individual case should be decided on its merits as regards the necessity for surgical interference.

The radical point of view regards every fibromyomatous growth of the uterus that can be recognized as a menace to the patient's health because of the numerous complications, immediate and remote, associated with these growths.

Although we have already shown that fibromyomata are exceedingly common, it is probable that not more than one in 2,000 patients with fibromyomata ever die as a result of the disease; at least this is the estimate of the older investigators who base their figures on the result of post mortem findings.

If we take the radical point of view and subject all the cases of fibromyomata coming under our observation to operation, regardless of the presence or absence of symptoms ascribable to the growth,

we shall have to consider a mortality list of at least three per cent., which is about the minimum associated with abdominal operations under the very best conditions. We would then have instead of one patient in 2,000 dying as a result of the disease, three in 100 dying as a result of the operation.

Therefore, I take the position that the mere presence of a fibromyomatous tumor in the uterus is not in itself an indication for surgical intervention. This also seems to be the position taken by Dr. Howard Kelly, who states in his textbook that "the majority of myomatous uteri require no treatment whatever" and when the tumor "is not larger than a three or four months' pregnancy and produces no subjective symptoms, no treatment of any kind is called for."

What then constitutes an indication for operation Does the possibility of cardiac disease being caused by the presence of these growths compel us to advise our patients that an operation is essential? In my opinion this possibility is too remote to be of any importance. I do not believe that the presence of fibroids, large or small, in the uterus has any bearing whatever upon the development of cardiac complications unless they are associated with hemorrhage. If, however, as a result of the growth of these tumors hemorrhage sets in and tends to persist, then we have to consider a condition of secondary anemia, which I regard as the important etiological factor in the production of myocardial changes, leading to fibrous and fatty degeneration of the heart muscle and to a loss of tone and contractile power resulting finally in dilatation of the heart. Thus we do not operate for the tumor, but because the tumor is threatening serious disturbance to the patient's health by uterine hemorrhage.

Does the possibility of the development of sarcoma in these tumors need to alarm us? In my opinion it is too infrequent and rare an occurrence to be used as an argument for operation in an otherwise simple and uncomplicated case.

When, then, do we advise operation? I believe that to justify the removal of these tumors there must be some urgent indication in each case. We have already stated that the chief symptoms of these growths are hemorrhage, tumor, pain, and urinary disturbances.

Hemorrhage is the commonest symptom we have to deal with and to my mind severe, frequently repeated hemorrhage is a positive indication for operation regardless of the size of the growth or the age of the patient. Personally I regard it as unwise to wait until the hemorrhage has become severe or until the patient is suffering from a profound secondary anemia before operating. I believe that when we find the quantity of blood lost at each menstrual period is beginning to exceed a normal average, and we know that the patient has fibromyomatous tumors in her uterus, we should not delay, but should operate promptly.

Nor are we justified in postponing operation because a patient is approaching the climacteric, on the assumption that the symptoms may clear up, for clinical experience does not bear out this assumption.

Tumor is the second common symptom. A growth sufficiently large to be recognized by the patient usually causes so much distress of mind and anxiety as to make an operation for its removal justifiable, even in the absence of other symptoms. All submucous polypi which have been extruded into or through the cervical canal should be excised.

Pain is a relative indication for operation and is usually caused by inflammatory changes in the tubes and ovaries or by degenerative changes in the tumors themselves associated with pelvic peritonitis. Partial or complete invalidism often results and can be relieved only by operation. Frequently one finds an operation imperative because of inflammatory disturbances in the tubes and ovaries, the fibromyomata themselves not giving any trouble.

Disturbances of micturition, frequency, retention, or dysuria, may be present and so persistent and distressing as to make operative interference imperative.

Among other conditions likely to necessitate surgical intervention are *strangulation of a subperitoneal fibroid* from torsion of its pedicle; *tumors complicated by pregnancy,* in which the tumor is fixed in the pelvis in such a position as to interfere with the birth of the fetus. Here I believe that if there is any doubt in the mind of the surgeon regarding the feasibility of a myomectomy in the earlier months of the pregnancy, then the patient should be allowed to go to term, and if labor does not terminate normally (as a matter of experience most of them do) a Cæsarean section can then be done.

Occasionally one has to operate for a tumor which, though producing no subjective symptoms, is increasing rapidly in size as a result of cystic degeneration.

TYPE OF OPERATION.

Myomectomy is always the operation of choice if it can be reasonably carried out without too much mutilation of the uterus. The chief contraindication to myomectomy is the presence of pelvic inflammatory disease. When the conservative operation is not feasible, then a supravaginal hysteromyomectomy with the preservation of one or both ovaries, if possible, especially in patients under forty years of age, is the preferable operation.

In performing this operation the surgeon should not forget to cut open the excised tumor and examine the uterine canal for possible malignant changes before covering in the cervical stump. Any suspicion of malignancy in the growth or uterine mucous membrane requires the complete removal of the cervical stump. This is important, as we have already quoted Kelly's findings of twelve cases of cancer of the body of the uterus with fibromyoma.

CONCLUSIONS.

1. Uterine fibromyomata are very common.
2. Heart murmurs with slight hypertrophy seem to occur more often than in other conditions. The lesion is not endocardial, but myocardial.
3. Operation is not indicated unless the tumors are producing symptoms likely to interfere with the patient's health.

535 Park Avenue.

CARCINOMA OF THE STOMACH.

Its Early Diagnosis,

By JOHN V. O'CONNOR, M. D.,
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Much has been said regarding the diagnosis of carcinoma of the stomach, especially early diagnosis. While we realize that we are dealing with an incurable and almost always fatal disease, it should occur to us that an early diagnosis is necessary if we expect to render the unfortunate sufferer aid that is worth while. I have selected carcinoma of the stomach as my topic because, like many of the profession, I realize that a very late diagnosis is the rule. Now, how are we to make an early diagnosis of this terrible disease?

I hold that by a more critical examination of the patient and the use of laboratory methods at our command, we shall be successful in any number of cases that would otherwise escape early diagnosis. Too much stress cannot be laid upon the fact that we should, if possible, exclude carcinoma in all patients over thirty or thirty-five years, complaining of gastric disorder. There are no set symptoms, objective or subjective, by which we can make an early diagnosis of carcinoma of the stomach, and that reason alone should be sufficient to direct our attention to the laboratory. If, after exerting our best efforts, we find that we are in doubt, an exploratory operation should by all means be advised.

What is to be gained by this exploratory operation? It enables you, in most cases, to make your diagnosis, and should you fail to find carcinoma, your surgical interference is often rewarded by finding such conditions as gastric or duodenal ulcer, gallstones, etc. Should any of these be present, I know of no better treatment than the surgical. Exploratory incision, properly performed, does no harm, and if further operation is not necessary, it will often serve as a guide to proper medical treatment. We are all familiar with the symptoms by which a diagnosis of ulcer, neurosis, gastritis, etc., is made. We know also, that many times these various diseases are quite typical of the symptoms noted, and we do not hesitate to make a positive diagnosis. There is no denying that the symptoms of the foregoing diseases, and many others, often closely simulate those of early carcinoma of the stomach. It is indeed a simple matter to make a diagnosis of carcinoma of the stomach when the patient presenting himself looks cachectic, gives a history of having lost thirty or forty pounds in a few months, and has a tumor almost large enough to see. These are the cases that require no effort to make a diagnosis, and surely confer no credit.

CASE. Mr. J. came to consult me about his condition, July 15, 1911. He had previously consulted two physicians and seemed much disappointed because he was not well. One of the physicians informed him that he suffered from intestinal indigestion, while the other diagnosticated his case as nervous indigestion.

I had known the gentleman for many years, always as a thin individual. When I saw him on the date mentioned, he did not seem to have changed much, and I confess that he did not look as if he had a malignant tumor. He stated that on the night of February 11, 1911, he was seized with a violent pain in the stomach, lasting for about ten minutes, followed by nausea lasting about an hour. He had never suffered from stomach trouble before and could not attribute the attack to anything he had eaten. After this attack, he consulted his physician, took treatment, and, as he said, felt better for a short time. His appetite seemed to improve and the nausea became less. After about three weeks he consulted another physician, received another treatment, and again felt better for a short time. He continued, however, as a patient of the second physician, for about two months, when he stopped treatment. He came to me in July, stating that he had vomited a few times, but that the vomiting was induced by putting his finger down his throat. He had never noticed any traces of blood in the vomitus, and was greatly relieved after vomiting. From the onset of his trouble pain had rarely been present, but nausea had been almost constant. He stated that his appetite was poor, but that the food partaken of did not cause any particular distress. He was very nervous, and for a few weeks had been unable to sleep at night, owing to attacks of cardiac palpitation. He was constipated, but had always been so. During the three weeks previous to his visit to my office, he had lost strength rapidly, which he attributed to his nervous condition.

Physical examination was not critical because it was not necessary. Palpation over the region of the umbilicus revealed a large, hard mass, movable with respiration, and painful under deep pressure. Auscultatory percussion showed the stomach to be enlarged. The stomach was dilated with sodium bicarbonate and tartaric acid, and this confirmed my findings previously made by auscultatory percussion. After expelling large quantities of gas from his stomach, the patient vomited about thirty-two ounces. Upon standing this was quite characteristic of gastric dilatation, being made up of three distinct layers. Further examination was unnecessary, and the patient insisted upon knowing the diagnosis. He was informed of his condition, but was evidently skeptical of the diagnosis, for after leaving the office he consulted another physician.

That was the last I saw of my patient. About two weeks later I learned that he had been operated upon, but did not survive the operation, the extent of which I do not know.

The history of the case just mentioned is certainly not typical of carcinoma of the stomach. The patient did not appear to be in the advanced stage of carcinoma. Up to the day he came to my office, he had followed his occupation as a real estate broker. To me he appeared to be a neurasthenic, and before my examination of his abdomen, I considered him such.

I do not maintain that much could have been done had the case been diagnosticated five months before. I do say, however, that there is a tendency among the profession to make a diagnosis of indigestion or some other condition, without first trying to satisfy themselves that something more serious does not exist. I think that if there were more early cases submitted for operation, the mortality following the operation for carcinoma of the stomach would be lessened, especially in those cases of slow growth.

When the tendency toward making a too rapid and careless diagnosis no longer exists or is greatly diminished, we can look forward to a lower mortality following such operations as pylorectomy, partial or complete gastrectomy.

65 MAIN STREET.

THE INTERNAL TREATMENT OF NEPHRITIC DISEASES.*

By PROFESSOR DR. H. STRAUSS,
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To what extent practical therapy is influenced by theoretical research may be perceived plainly

*Based upon a lecture delivered at the German Medical Society of New York, October 14, 1912.

in the study of the internal treatment of renal diseases, if the progress of the two last decades is taken into consideration. Scientific research has overthrown many old conceptions, but also has confirmed many of the old principles by establishing for the physician a better method of therapy. Above all, the research of the two last decades has given to us a better understanding of two processes within the body, namely, uremia and dropsy. Our knowledge of these processes has been deepened and extended. The progress attained has been won solely by the fact that we have observed metabolism during the different kinds of nephritis in their different stages. Although the secretion of albumin formerly was considered the main point, we now consider the retentions of paramount importance, at least where uremia and dropsy are concerned. The former process would present a clearer, more sharply defined clinical aspect if we judged its details better. However, that is by no means the case; at present there exists a wide divergence about the term, uremia. While some authors apply it to the so called "convulsive uremia" only, others desire to extend the term much further by using it also in the subacute and subchronic degeneration of the mind and body forces, such as we often observe during the last stages of renal insufficiency of the surgical form. It is a well known fact that there exist different theories about the pathogenesis of uremia, two of which, at least, are in antithesis, namely, the theory of the cerebral edema, represented by the Traube theory, and, second, the theory of autointoxication, as presented by Frerichs and others. Personally, I adhere to the theory of autointoxication, especially in cases of interstitial nephritis, i. e., to the theory of retention, about which I published a monograph more than ten years ago. My researches of that period showed that the amount of noncoagulating nitrogen, which could be filtrated and which I called "residue" nitrogen, in cases of chronic interstitial nephritis, sometimes amounted to 200 to 300 mgm. in 100 c. c. of serum. In healthy persons only about thirty mgm. of residue nitrogen was found in the same amount of blood serum. In parenchymatous nephritis the conditions are sometimes different; in such forms of the disease, however, the simultaneous appearance of dropsy should be taken into consideration, which acts as a diluent of toxic matters, and which, on account of this fact, is liable to conceal the retention present.

New researches by Hohlweg and by myself have given the same results, so I may assert safely that in a great many cases of uremia the retention of nitrogenous sediments of metabolism is the cause of the disease. We judge so from the fact that, while the residue nitrogen increases in amount, the indications of a coming uremia increase as well. I have shown lately, in agreement with Hohlweg, that the quantitative determination of residue nitrogen of the blood serum materially aids the prognosis, at least in the interstitial form of nephritis.

At present I attach no great value to the question, Which uremia cases are induced by a retention of nitrogenous sediments? because, as already mentioned, the definition of the disease is given differently by other authors.

If we assume that uremia in many cases is no more than an autointoxication by retention, we must arrive at the deduction that we should dilute the toxines and try to wash them out of the body. Furthermore, we should not allow any alimentation which could be considered as a cause of autointoxication, or we should reduce it to a minimum.

Concerning the latter point, we are, I am sorry to say, not yet in a position exactly to specify all the noxious albuminous foods which favor uremia. I may say, however, that the reasons for these allegations cannot be given in detail here; meat, especially, seems to be noxious, and I consider it right, therefore, to diminish the allowance of this food during the disease. However, until we are better informed about this question, I believe in a general diminution of albuminous alimentation, but up to such a degree only that the heart nourishment does not suffer. Chittenden, among other American researchers, has found that from fifty to sixty grammes of albumin per diem suffice. In cases where uremia seems imminent, some days should be observed every week, where only about one half of the above stated quantity of albumin is given.

Concerning the washing out of the body in order to prevent uremia, I should like to mention that dissenting voices have been heard against this procedure. Many authors, especially those who adhere to Oertel's theory, assert that the amount of liquids should be decreased in order to protect the weakened heart. I am unable to share these misgivings for the following reasons: In the first place, Oertel's theory has not been proved to be correct, while second, the idea of weakening the heart by allowing normal or more than normal quantities of liquid, is exaggerated. In proof, I refer to the many cases of diabetes insipidus, which, if they do not present a complicating feature in the shape of arteriosclerosis, hardly ever present any cardiac changes. That can be shown by measuring the pressure of the blood. A comparison with these cases seems justified, because the question arises, how the passage of large amounts of liquid acts upon the heart and the blood pressure. I should like to call attention to the fact that experiments have shown—I have made some of them myself—that these large amounts of liquid bring about scarcely any changes in blood pressure. However, even if heart and blood pressure should be encumbered by a normal or abnormal administration of liquids, it should be borne in mind that patients who suffer from heart and kidney diseases cannot be compared where this question is concerned. In diseases of the kidneys, the adequate supply of liquids has a plain purpose, namely, to free the body of toxines. In order to attain this end, it is permissible to accept some disadvantages of the method, especially if these disadvantages are not too pronounced.

Through the experiments of Eckehorn, Claus, Hanssen, and Gröndahl, it has been proved that an adequate exhibition of liquids aids in expelling the sediments of metabolism. I consider it, therefore, even now, much more desirable to combat the danger of poisoning than to prevent heart attacks. I should like to state emphatically, however, that an inundation, without limit, of the organism with

liquids has never been recommended by me, neither have I ever failed to take into consideration the condition of the heart. I always have advised a normal supply of liquids, or a little more; for such cases only as, judging by experience, tend to incline toward retention, or where uremia seemed imminent. Beside these facts, I have always been a stout adherent of the principles of heart protection in cases where retention might be expected. However, it is true that I have recommended a protection of the heart only in cases where the organism is likely to derive profit; for instance, bodily quietude and keeping away from such stimulants as coffee, alcohol, tobacco, etc., and never have I recommended measures for the protection of the heart which were not able to render service to the sufferer. Among other measures, I count the increase of blood pressure, which, in agreement with such authors as Krehl, Romberg, and others, I consider a compensative measure, which should not be influenced in a one sided way. Like other authors, I think it fortunate that all drugs which possess the effect of diminishing the pressure of blood, can bring about such diminution in a weak manner only. A decrease of the blood pressure, it seems to me, can be attained in nephritic patients only by diminishing the cause of the increased blood pressure. That can be done in some cases only, by no means in many of them, chiefly by insisting upon quietude of the body and by eliminating alimentary stimulants. A bland diet, free from meat, will give the best results. During treatment I especially emphasize the eminent importance of good heart action, because the best prophylaxis lies in a properly working heart. Every unburdening of this organ which is carried out for purposes of cleansing the blood of nephritic patients without harming them, I consider to be the foremost endeavor of the treatment. This fact has been rather verified by modern research into metabolic processes against other points of view.

Against an abundant exhibition of liquids it has been urged that dropsy is favored by it. In going into this question, it is necessary to distinguish two different forms of dropsy, in nephritic patients: The first is caused by cardiac insufficiency, which I will call *Hydrops cardiacus*. The second form is the typical nephrogenic dropsy, such as is found in Bright's disease. Of the latter kind, are all those cases which do not show the well known favor for dependent parts, such as is seen in hydrops cardiacus. Furthermore, these cases are characterized by quick changes, which sometimes cannot be defined at all.

Nephrogenic dropsy is found in such cases only as produce a urine rich in albumin and other elements, and where the patients are conspicuously pale. Modern research has opened up new points of view for such typical cases of nephrogenic dropsy, chiefly by calling our attention, not alone to the urine but also to the chloride of sodium. As already mentioned, I recommended, ten years ago, food which contained as little salt as possible, beside advising a medicative stimulation of the elimination, by forbidding salt entirely for curing dropsy. I cannot dwell here upon the reasons which induced me at that time to take this step, because I stated them explicitly lately, during a lecure held at the Post-Graduate School, New York. However, I should like to mention that Widal and Javal, some time later, published the same idea, based, however, upon different experiments than those I had made. I do not intend to go into technical details of the alimentation poor in salt here, because I have published a pamphlet entitled *Practical Hints for an Alimentation Poor in Chlorides*. I will therefore only mention that in this kind of diet the amount of salt given in soup, bread, and meat has to be made a special point of attention.

In applying *strict* cures, i. e., cures in which the amount of salt should not exceed 2.5 grammes per diem, the milk allowed to the patient must also be taken into consideration, while saltless butter only should be allowed. *Medium strict* cures, in which up to five grammes of salt may be allowed per diem, do not require such far reaching restrictions. The elimination, or partial elimination, of salt from the diet, removes one of the chief causes of dropsy; in other words, the chain of dropsical proclivities is broken. If nephritic patients take too much sodium chloride, a severe local irritation of the kidneys may be the consequence. Therefore I have abstained from employing physiological salt solutions in such cases for many years. In employing drop clysmas, which I favor for uremic symptoms, I have used ordinary water only, while I make intravenous or hypodermic injections only by means of isotonic sugar solutions.

We possess for the *medicative* stimulation of salt elimination several excellent drugs. These remedies not alone induce a polyhyduria, but also a polychloridnria; their effect, therefore, consists in bringing about a hyperemia of the kidneys. This fact being established, stands in antithesis to the older views. We were inclined formerly to look for the point of attack of the above mentioned remedies within the epithelial cell. O. Loewi, having established these new facts, to a certain extent has dispelled the misgivings of anxious physicians, who formerly did not use their diuretics during acute irritations of the kidneys. Personally, I have never had any misgivings in prescribing such preparations during acute irritations of the kidneys, and I must say that I have never observed any bad effects through them.

In the question which we discuss here, it interests us also that small doses of digitalis possess a special effect upon the kidneys, besides being a cardiac tonic. For that reason it is advisable, as I have often found, to employ a preparation which is a combination of digitalis and theobromine, for the purpose of freeing the body from water.

It has been recommended from another standpoint, to free the body from salt in kidney diseases by other means; however, the method recommended is liable to give rise to misconceptions, and it must be stated therefore emphatically that the elimination of salt should be considered only as a means *to free the body from water*, and that the new method is not a panacea for every disease of the kidneys. In cases where the elimination of salt is also employed in cardiac dropsy, I should like to state that in its *strict* form it is indicated only where a maximal obstruction of the kidneys is present.

In slight cases, the above mentioned method should not go too far. The conditions in cardiac dropsy concerning the elimination of salt are entirely different from the cases of nephrogenic dropsy, even if it may be said that a decrease of salted foods is favorable, because it brings about a use of liquids.

As mentioned already, I should not like to recommend a decrease of liquids, if uremia was present or imminent, because combating this state seems more important to me than combating dropsy. We possess more effective remedies for treating the latter disease than for uremia. It is of importance, therefore, to combat uremia always as soon as possible, and intensively at that. On account of experiments and reflection, about which I have already reported, I am inclined, that is up to a certain degree, to consider dropsy as a state which may even show antiuremic properties. To a certain extent, the poisons are diluted by dropsy. In uremia *the amount* of toxines is not as dangerous as their degree of concentration, by which they irritate or paralyze the tissues. If drugs fail to help dropsy, there still remains puncture, by which we are able to draw out a lot of poison. *Cæteris paribus* I should prefer at all events, a humid uremia to a dry one.

Sudorific treatments, which formerly possessed a great reputation in combating uremia and dropsy, have lost a great deal of their prestige through late researches. Other authors, as well as I, have found by experiment that the blood cleansing properties of sudorific treatments in kidney diseases do not amount to very much. There exist certain cases, however, in which such treatments are worth trying, especially if it is certain that the cardiac functions are good. In such cases, I would suggest that during perspiration, or afterward, a good deal of liquid is administered. Hot tea is the best medium for such purposes, because it possesses diaphoretic properties at the same time. I do not contend that sudorific treatments cause an *inspissation* of the blood; I believe, however, that they temporarily only free the tissues from water. I should like to recommend, therefore, an abundant *exhibition* of liquids, while the treatment is going on. It does not seem absolutely sure to me that sudorific treatments favor the formation of uremia, as is asserted by Professor von Leube and others.

Even less trustworthy than these sweating measures are those which expel the water by means of the intestine. There are certainly some special cases where the intestine is useful for the elimination of the water. That fact has been established by experiments in cases of uremic ulcers of the large intestines, by pathological anatomists.

Besides studying the interrupted metabolism in kidney diseases, we also have learned some new features *by purely clinical experiments.* The question of *orthotic puberty albuminuria,* for instance, has been closely studied, with the result that the *constitutional* forms, which formerly had been neglected a little, in favor of the *postinfectious* forms, now have received treatment. The diagnosis of the two different forms is not always easy, but when the correct form of the disease has been recognized, its therapy is of especial value, for the reason that the method of general tonics, which was used, often stands in antithesis to the principles of carefulness, which up to now were practised in cases of albuminuria. For a number of cases, at least, a progress can be recorded, where the physicodietetic methods for the purposes of strengthening the body had been employed to a larger extent than we should have ventured ten years ago.

A new method has been recommended lately for combating the symptoms of albuminuria itself, i. e., that of neutralizing or alkalinizing the urine, as done by Höslin. It is true that his method fails to do good in a large number of cases. Personally I have observed only one pronounced success in a true case of albuminuria, in which few elements were present. In this case the disease was considered to be a late stage of a postscarlatinal attack. At present, therefore, there has not yet come the time for a far reaching optimism in this field, even through operative measures, such as Edebohl's method and the excision of the suppurating core of the tonsils.

In most cases there certainly has not yet been found a remedy which would eliminate the disease as a whole. However, the progress in combating nephritis, so far attained, can be certainly hailed with joy. Recent experiments also have improved the method of prophylaxis in nephritic cases, and I do not boast in contending that the knowledge acquired during the last two decades has given us the possibility of prolonging the lives of many nephritic patients, and of palliating subjective symptoms much more than formerly. Even small progress in the therapy of so grave a disease must be welcomed.

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CHRONIC NEPHRITIS.

With Special Reference to Anemia.

By Gilbert Parker, M. B.,
Burin North, Newfoundland.

I shall deal with the subject only in so far as it is demonstrated in the following case. I may say that the patient lives in a little village, called St. Lawrence, where there is no physician, and where I occasionally make a visit, only when sent for.

Case. C. B., male, aged forty-one years, white; father dead from heart disease at age of seventy years; mother dead from old age; sisters, none; brothers, two alive, one well, one insane.

Personal history.—Patient had always resided in Newfoundland. Was a fish trader by occupation and had always been noted for great strength and endurance. Past illnesses were whooping cough and measles when a child and typhoid fever when a youth.

Present illness began three years ago. As usual in the fall of the year he went into the woods to cut fire wood and "stuff" for fish flakes. He did not remember being exposed any more than usual, but he got the usual number of wettings, and spent a good deal of time in wet clothes. About a week afterward, when he had come out of the woods, he felt a sharp pain in the groin, which did not radiate, and about the same time he began to feel unwell. There was nothing definite, but just a feeling of something being wrong. About six weeks passed in this way, during which time, as he said, "he felt not too sick to prevent him working and not too well either." He then began to swell, at first in the hands, and this was twelve months before reaching the maximum, during which time ankles, legs, and finally his whole body became involved in a general dropsy.

During this time he received treatment very spasmodically, owing to many reasons, chief of which was his place of residence, and in consequence he received no benefit. After this, he became bedridden and remained so for two months, during which period I saw him for the first time, as I happened to be passing through the place. He was then tremendously swollen. There was considerable fluid in the peritoneal cavity. I punctured the swollen tissues in many places and gave the proper treatment and directions for diet, etc. His appearance, I remember, was that of great anemia and the blood stain on a piece of white cotton was by comparison with my own, of about sixty per cent. hemoglobin. There was that peculiar yellowish white pallor and flabbiness of the face which is often so marked. The visible mucous membranes were extremely pale, and the urine, which was greatly diminished in amount, was loaded with albumin. His appetite remained good during the two months of his stay in bed and he felt first rate apart from the discomfort due to the swelling.

Three weeks after I saw him, he got up and was quite improved; but the improvement was short lived, as there was no direct supervision of his case and treatment by correspondence was unsatisfactory. He then did the common thing among his kind, namely, sent away for a "treatment." This treatment was in two parts. There was first guaranteed that the dropsy would be removed and then there would follow a tonic to restore the health. The first was accomplished in six weeks by what must have been a very powerful diuretic, which induced the production of enormous quantities of urine. I had hesitated to stimulate the kidneys freely, fearing to make them balk. The patient and his foreign advisor had no such fears.

The second part of the treatment, as is usual, was a miserable failure. The patient meanwhile discarded his immense clothes and began going about again. The swelling never returned. He was unable to work, but walked about a little. Only occasionally did swelling appear about the ankles. He had great shortness of breath and tired very easily.

I saw him again about six months after the anasarca had been removed. As always, the anemic appearance struck one first. The urine was still very full of albumin, but he passed a very normal amount daily. His appetite was good, and he was exceedingly fond of vegetables, especially cabbage and turnip. He seldom had meat, but usually grouse in season. One thing he craved for and would not give up, was a little salt cod fish boiled for breakfast every day.

The diet of the common people about here consists chiefly of bread, tea, and molasses. Some homes now use a good deal of oleomargarin. These things are all some people have now all through the year. Salt cod fish is often boiled for breakfast. Almost every man is a fisherman, and the codfish is the chief fish caught. Vegetables, mostly brought from Prince Edward Island, are now being used during the winter months, but chiefly for the midday meal on Sunday. Fresh meat was a few years ago a very scarce food, but now is becoming more plentiful, although the humbler folk consider it a great luxury. There are no meat shops or itinerant meat vendors. Milk cannot be obtained at all in many villages and in most places is scarce.

To resume the history, the patient's craving for vegetables was very marked. When he could obtain a small amount of milk daily, he usually diluted it freely with Vichy water. His heart was subjectively and objectively normal and his blood pressure low. I tried every measure, hygienic, dietetic, and medicinal, to combat the anemia, but unsuccessfully.

Coming to the bleeding, this began when he first became sick three years ago, and as far as I can gather, it was for epistaxis that he first consulted a physician, who found the albumin in his urine. He would feel a tight sensation across the bridge of the nose and upper part of the face, and then hemorrhage would follow, lasting for a few hours. The blood would come quite freely. Pressure and syringing with hot water always controlled it. This would recur about every two months. During the last year epistaxis occurred every six weeks and lasted longer each time. Small breaks in the skin and cuts also bled freely.

In September of this year, he was picking his teeth one day and the gums became bruised and bled steadily for three days. At no time were there any subcutaneous hemorrhage, nor macroscopic blood in urine or feces.

On December 5th he was suffering great pain from some decayed teeth and from an abscess which developed in the face below the outer end of the left eye. There were two teeth extracted, the first right lower molar and the second upper right molar. The sockets and gums oozed freely until December 11th, when he became very weak and alarmed and sent for me. I got there about eight hours later at 5 p. m. His appearance was ghastly. He was extremely pale and very apprehensive, propped up high in bed, and almost afraid to speak for fear of dislodging clots which almost filled his mouth. He had not slept much for three nights, had eaten nothing, but had taken a lot of cold liquids. His pulse, though regular, was very small, fast, and easily compressed. The rate was 148. He complained of great faintness and was in bed with some of his clothes on and his head high. I lowered his head and raised the foot of the bed to help overcome his giddiness. Then he got a hypodermic injection of morphine, grain one quarter. I then examined his mouth. One large clot, about the size of a man's thumb, protruded from each socket. When these were removed the bleeding recommenced and after syringing with hot water and drying out as well as possible, I plugged each hole with absorbent cotton saturated with epinephrin chloride, one to 1,000. A piece of cork between the jaws kept the plugs in firmly. After about five minutes I removed these and substituted others soaked in a similar solution. I then gave him a hypodermic injection of a well known English preparation of ergot and twenty grains of calcium lactate by the mouth. He went asleep until 10 p. m., and when he awoke was already feeling much better. His pulse was 136 and felt improved. He then got one quart of normal saline per rectum and another powder of the calcium, after which he slept until 5 a. m., when I removed the plugs from both sockets and found them perfectly dry. However, I repeated the medication as before. The abscess in the face, referred to above, had been lanced and was almost well. The patient's wife, while washing his face, loosened the scab and bleeding at once commenced, which was controlled by a pad and pressure, with difficulty.

At the same time the right nostril began to ooze and the blood appeared freely. This was stopped by inserting a cotton plug saturated with the suprarenal solution and pressing from without. I was obliged to leave at 5 p. m. on the 12th, and there had been no bleeding during the day, although I removed the plugs from the mouth. He said he felt better than he had for weeks, was taking some nourishment, and constantly calling for milk or water; in other words, fluids. During the day he received calcium lactate twenty grains, every two hours.

December 13th, I heard from the patient and bleeding had not returned. December 15th, the patient had another slight hemorrhage from one tooth, which his friends were unable to check. He was also taken with a spasm, which, from their description, must have been a convulsion, and died suddenly.

This case simply illustrates the severe degree to which anemia in nephritis may proceed. The viscosity of the blood was practically nil, and the bloodvessel tone must have been of a very low order. The blood stains on white cloths were extremely pale. Doubtless the two factors, namely, injured and permeable vessel walls of poor tone and loss of clotting power in the blood itself, each participated largely in the production of hemorrhage. There is no history whatever of a bleeding family. A short time ago, a young woman, not of a bleeder family, here, had a tooth extracted which bled freely, though intermittently, for a week. Everything was tried to arrest the bleeding, and success was at last accomplished only by a thorough cauterization of the socket and the sides of the gums with a red hot iron. There was not the slightest recurrence.

EDEMA OF THE GLOTTIS

Associated with Epilepsy.

By G. Kirby Collier, M. D.,
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First Assistant Physician, Craig Colony for Epileptics.

Pulmonary edema, accompanying serial epilepsy, status epilepticus, and even single seizures, is frequently met with, but the case herewith cited, in which edema of the glottis occurred, is so unusual that it was thought to be worthy of being reported.

The mechanical theory, in explanation of pulmonary edema, can be readily accepted in cases of epilepsy where there is a marked increase of capillary tension produced by an excess of blood from the right heart. This was clearly demonstrated by Welch. In Osler's *Modern Medicine*, page 633, mention is made of edematous laryngitis "occurring in persons of neurotic temperament," and that heredity plays a part is recalled by the following quotation from Osler, who, in 1888, reported a series of cases with heredity features. He says: "The peculiarity transmitted must be either a morbid susceptibility of tissue or inherited peculiarity of metabolism or both."

The infectious and the noninfectious forms are seen, also the secondary forms, due to tuberculosis, syphilis, carcinoma, typhoid fever, scarlet fever, measles, and smallpox, and those following valvular disease of the heart and nephritis. The case I wish to report is as follows:

Case. R. L., aged twelve years, was admitted to the Craig Colony in April, 1912. Father was alcoholic and died of tuberculosis. Mother living and well. Both parents were twenty-two years of age at time of patient's birth, patient being the first child. Following the birth of this child, mother had two miscarriages. Delivery is said to have been normal.

Patient made good progress as a child, and was supposedly normal until seven years of age, when he was noticed to be forgetful and very nervous.

In December, 1910, he was sent to an institution for the feeble minded owing to his progressive mental failure and inability of mother properly to care for him. The first epileptic seizure was reported when patient was eleven years of age. The seizures were mild at first, but later became more severe in character.

On admission to the colony, he was found to be a poorly nourished boy of a Binet age of three years (actual age, twelve years). Scars over frontal and occipital scalp as result of seizures. Prominent scapulæ and thin walled chest. Examination of the heart and lungs was negative. No enlarged glands. Superficial and deep reflexes were normal. Examination of urine was negative.

In November, 1912, typhoid fever developed, and ran a course of about seven weeks, during which the patient had intestinal hemorrhages. He made a good recovery and had been up and about the wards, and allowed a regular diet for some weeks. Decubitus ulcers, which had developed during his typhoid condition had entirely healed. Patient was very active, having occasional seizures and periods of mild irritability.

On the evening preceding his death, it was noticed that patient was snoring very loudly, and examination of chest was made, but nothing abnormal was found. Efforts were made to examine throat, but owing to lack of cooperation of patient, this was very unsatisfactory. He was up two or three times during the night, and early on the morning of his death, February 11, 1913, he had two grand mal seizures, from which he did not recover very promptly, and the physician was called. Patient was found to be having considerable difficulty in breathing, congestion of face and neck being quite marked.

Expiratory efforts were made with difficulty, and only a small amount of air was entering the lungs. Efforts were made toward giving patient relief, yet intubation was not successful, owing to the severe edema, which could be easily felt by the examining finger. Tracheotomy was decided upon, but patient's death occurred before this could be done. Autopsy was performed and the diagnosis was confirmed.

The unusual features of this case are the glottic edema occurring with epilepsy, and the rapidity of its course.

Craig Colony.

Prize Essays.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

CXXXIII.—How do you treat influenza, especially in view of sequelæ? (Closed April 15th.)

CXXXIV.—How do you treat muscular rheumatism? (Answers due not later than May 15th.)

CXXXV.—How do you treat burns? (Answer due not later than June 16th.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short, if practicable no one answer to contain more than six hundred words; and our friends are urged to write on one side of the paper only.*

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the Journal. Our readers are asked to suggest topics for discussion.

The prize of $25 for the best essay submitted in answer to Question CXXXII was awarded to Dr. James J. Walsh, of Scranton, Pa., whose article appears below.

PRIZE QUESTION CXXXII.

THE TREATMENT OF OBSTINATE CHRONIC BRONCHITIS IN THE MIDDLE AGED.

By James J. Walsh, M. D.,
Scranton, Pa.

In probably no other condition is an indirect method of treatment so frequently necessary as in chronic bronchitis of mid life. Careful examination (including laboratory methods) not infrequently determines that the bronchial disease is superimposed upon some other condition of ill health. Occupation, mode of life, and habits at times are of no little importance as predispositions, or at least aggravate the disease. Especially in the middle aged are we liable to find associated with it derangements of the kidneys and the circulatory system, and so called chronic rheumatism and gouty diathesis.

For cases of chronic bronchitis presenting such underlying complications as the foregoing the primary mode of treatment is obvious. Living or working in damp or dusty surroundings, high living, and alcoholism should be promptly interdicted.

The cardiovascular renal apparatus is usually worthy of not a little attention. For cases showing any kidney deficiency I usually prescribe a course of salines or an occasional blue pill and tincture

of ferric chloride, from five to ten minims three times a day, or Basham's mixture, from one to four drachms three times a day. Blood pressure and auscultatory sounds are the best indications for treatment directed toward derangements of the circulatory apparatus. With enfeebled cardiac sounds or lowered blood pressure I find digitalis, five drops of the tincture, three times daily, a valuable adjunct to the direct treatment for bronchitis. Chronic pulmonary congestion, usually indicated by accentuation of the pulmonic second sound is best relieved by small doses of salines frequently repeated and nitroglycerin, 1/100 grain three or four times daily.

Of course, in all cases the bowels should be kept free and open with salines or some mild laxative. Certain cases undoubtedly call for some regulation of the diet tending toward forced nourishment. For this purpose I remain unconvinced that we have yet anything better than good fresh milk and eggs. Milk in the quantity of from three to four pints, with from two to six raw eggs taken throughout the day, in addition to regular nourishing meals, will increase the general resistance wonderfully.

Generally speaking, nothing is so liable to beget failure or even harm as the promiscuous exhibitions of intended remedies to allay the cough. Much of the cough in chronic bronchitis is nonproductive and entirely unnecessary. This can be controlled without the aid of drugs if the patient has intelligence enough to understand that nonproductive coughing is usually unnecessary and with a little effort and practice can easily be suppressed. I usually depend upon drugs stimulant in character to rid the lungs of secretion, relieve congestion, and improve the respiration and nervous system. Though a somewhat inelegant mixture, I find such a prescription as the following usually very serviceable:

℞ Ammonii chloridi, } ..... āā ʒii;
Pancreatini, ... }
Spiritus ammoniæ aromatici, } ..... āā ʒiv;
Tincturæ nucis vomicæ, ... }
Spiritus glyceralis nitratis, ... ♏xxv;
Elixir calisayæ, q. s. ad. ..... ℥iii.
M. Sig.: Teaspoonful in water three or four times daily.

Ammonium carbonate, five grains to a dose, greatly increases the expectorant powers of the prescription. Ammonium chloride, or any expectorants, should not be continued beyond a stage where the secretions are sufficiently fluid and easily expectorated. Profuse liquid secretions may require moderate doses of belladonna, with which I usually combine one thirtieth of a grain of strychnine. In excessive secretion the following prescription seems to o goo in some cases:

℞ Olei caryophyli, } ..... āā ʒii;
Spiritus ammoniæ aromatici, }
Misturæ glycyrrizæ compositæ, q. s. ..... ℥iii.
M. Sig.: Teaspoonful after meals.

For cases with thick tenacious sputum, or when the sputum tends to be purulent in character or loaded with such organisms as the staphylococcus, streptococcus or pneumococcus, as shown by the microscope, I think the most valuable drug we possess is creosote. Only under such indications as given above is creosote necessary, and its administration is never required over long periods of time. The dose should be one drop three times a day, increasing one drop daily until ten or more drops to the dose are being administered. Most success in prescribing this drug depends upon having pure beechwood creosote thoroughly dissolved in one quarter to one half a glass of water as hot as can be swallowed without scalding. By following this plan very little stomach discomfiture will be encountered.

Balsamics I rarely resort to, but have found that sandalwood oil and terpinol seems to be of much benefit in some cases where the secretion tends to be persistently scanty. I prescribe them in average doses of five to ten minims or grains, in capsules. For cases complicated by asthma or emphysema I like to add physostigma to the regular treatment; about one eighth of a grain of the extract to a dose.

I do not believe much in inhalations, but some patients undoubtedly derive benefit from this form of treatment, and they may exert no little influence as stimulants to the mucous membrane and may limit the growth of organisms. I use them only when other methods of treatment seem inefficient. A stimulant inhalation for use in the nebulizer to be used several times daily is the following:

℞ Menthol, ... gr. x;
Oil of eucalyptus, ... ʒi;
Oil of tar, ... ʒii;
Liquid petrolatum, ... ℥i.

Medicated steam inhalations, if used at all, should be taken at least three times daily. A good combination for this purpose is the following, one or two drachms of which is added to boiling water in an ordinary or croup kettle, the patient inhaling as much of the steam as is possible for twenty to thirty minutes.

℞ Compound tincture of benzoin, ... ʒi;
Menthol oil of eucalpytus, } ..... āā ʒiv.
Creosote, ... }

Terpine hydrate and rectified oil of turpentine in large doses are the best internal drugs for fetid bronchitis or bronchiectasis.

To practically all of my patients with chronic bronchitis I administer iodine and arsenic. The iodine is given as an inunction, to avoid disturbing the stomach, or in the form of potassium or sodium iodide or the syrup of the iodide of iron, all in moderate doses. I think a general tonic is valuable, especially as the patients improve, and in those patients who require forced nourishment. For this purpose I use such drugs as pepsin, hydrochloric and phosphoric acids, strychnine, arsenic, and sometimes iron.

I have given both heterogeneous and autogenous vaccines, but am not impressed much with the results in any cases with this form of treatment. I have had better results with treatment along the lines of the autotheraphy of Duncan.

Following a line of treatment such as stated, I very seldom am obliged to resort to such sedatives as codeine or heroin, but I recognize the fact that they are occasionally necessary and valuable for coughing which is persistent, aggravating, and racking, and which cannot be controlled otherwise.

Finally, of course, we all know that many patients derive no benefit from any treatment unless it is combined with a change of climate. To this class belong those who have enough time and money to desire some such directions; also those victims of the

strenuous life—misers of time who will not pay sufficient attention to treatment otherwise; cases of periodic seasonal bronchitis (winter cough, etc.), and cases complicated by persistent profuse or scanty secretion, or organic disease of the lungs or heart. On the whole, a warm, moist, equable climate is to be desired, such as Southern California, Florida, or the Riviera. For cases with profuse expectoration a high dry climate is preferable, but great altitude is contraindicated in the presence of such complications as feeble circulation, cardiac or renal disease, asthma, emphysema, and bronchiectasis or for patients generally enfeebled. The seashore or a sea voyage is best for cases with scanty expectoration.

Dr. A. J. Zuckerman, of New York, states:

In considering the treatment of obstinate chronic bronchitis in the middle aged it is of prime importance to determine whether we are dealing with a primary or secondary bronchitis and, if the latter, the underlying cause. This is best ascertained by a systematic examination of the respiratory, circulatory, and urinary systems for any constitutional affection. It is beyond the scope of this paper to enter into a detailed discussion of the various causes of this disease; confining such to the mere mention of the most important factors in the discussion of the treatment. Although one of the least satisfactory of diseases to treat, it is just these cases where if a careful study and observation are made, and when judiciously managed, that we frequently get the most surprising results.

The treatment divides itself into a consideration of hygienic, dietetic and medicinal measures. The hygienic treatment of these cases plays a most important rôle. As much outdoor life should be indulged in as possible. Many of these patients, either because of their occupation or fear of cold air in the winter, lead entirely too much of an indoor life. To attempt to relieve them by drugs alone not only fails but is injurious. In bad weather, however, they should remain indoors as much as possible. Woolen underwear should at all times be worn next the skin. The feet should be kept dry, and in winter patients should wear thick soled shoes to prevent chilling, as after long standing on a stone walk. They should guard against exposure to extreme cold, dampness, and sudden changes of temperature. When possible, a change of climate, especially in winter, is most desirable. Patients with profuse expectoration are generally most benefited by a dry warm climate, such as that of New Mexico, California, and Egypt, whereas if there is little expectoration a moist warm climate, such as that of Florida, the West Indies, or Algiers is preferable.

Every possible precaution should be taken to prevent repeated acute attacks. Any abnormality in the rhinopharyngeal tract predisposing to such attacks should receive prompt attention. Proper attention should be given to the activity of the skin, bowels, and kidneys, to prevent the accumulation of waste substances and their deleterious effect upon the general system and the respiratory mucous membrane. Laborious occupations or those exposing to dust or irritating vapors must be abandoned.

There are no restrictions to be placed on the diet in the way of any particular food, but all excesses should be avoided. Alcohol, excepting for those who are used to it (when the quantity allowed should be limited) is better omitted, and any excess is injurious. The evening meal should be eaten no later than six p. m., and it should be light. Meat should be used once a day, and that only at noontime. In cases of malnutrition forced feeding and a properly selected hematinic are most beneficial.

I have had occasion to observe several patients in whom there were no physical signs of tuberculosis and no rise of temperature, while repeated examination of the sputum was negative; yet these patients did not come up to the average physique, and they were greatly benefited by taking between four and six eggs daily and plenty of milk independently of their meals.

The medicinal treatment consists of measures (A) to improve the general health, (B) to correct the underlying cause, and (C) to improve the bronchial mucous membrane, thus lessening cough and expectoration.

A. The general health should be improved by measures indicated in each individual case. An anemic condition requires a properly selected hematinic; a chronic gastric catarrh, the necessary gastric remedies and a restricted diet; and a neurotic state, hydrotherapeutic measures, the abstinence from all cerebral excitants, and an evenly regulated life. Walking several miles daily is beneficial in an all around way. A hot bath once or twice a week and a cold shower bath every morning, provided good reaction is obtained, are excellent.

B. The treatment of chronic bronchitis associated with chronic pulmonary affections does not differ materially from the management of the latter cases, and therefore will not be considered separately. The specific bronchitis of chronic pulmonary tuberculosis requires overfeeding, plenty of fresh air, and rest.

In cardiac insufficiency we have a congestion of the bronchial mucous membrane, with the resultant chronic catarrhal state. Digitalis acts here almost as a specific. Twenty minims of the tincture, three or four times a day to begin with, and then reducing the dose to ten minims three times a day, with rest in bed and a semisolid diet, will relieve the cough remarkably in some of the advanced cases of cardiac insufficiency. Ten minims of the tincture three times a day, and a not necessarily strict rest, will suffice in the lesser forms of cardiac disturbance. The digitalis must be continued in small doses for a month or two, possibly with an intermission of several days in between. Afterward a course of it now and then, particularly when there is evidence of failing compensation, is necessary. The sleeplessness of advanced cardiac disease must be combated by either a dose of compound spirit of ether or paraldehyde, and when these fail morphine sulphate (one fourth grain) is imperative; to be stopped just as soon as improvement is manifested. Later the addition of a tonic is valuable. The official elixir of iron, quinine, and strychnine is excellent, the strychnine acting as a cardiac tonic and the iron and quinine as hematinics.

In chronic nephritis we frequently have a bronchitis of toxic origin, the toxines acting upon the

respiratory tract and its cerebral centres. We always have more or less circulatory changes complicating the renal affection, and we have to treat them accordingly. A well regulated life, avoiding excess in food, the absolute abstinence from all alcoholic beverages, a normal bowel movement daily, and special attention to the skin by a daily warm bath and the administration of a suitable tonic, such as Basham's mixture, constitute in the main the general management of these cases. In those requiring additional direct measures, care should be taken to select those drugs which do not irritate the kidneys.

Gout is a recognized cause of bronchitis and it is best met by a well regulated life, the abstinence from "elixirs of life," and internally potassium iodide, ten grains three times a day, either alone or in combination with wine of colchicum. Chronic bronchitis of luetic origin requires a thorough course of mercury and potassium iodide.

C. The management of primary chronic bronchitis, and as an adjunct in the secondary form, by direct measures is far from satisfactory. The large number of drugs recommended is alone sufficient proof of our helplessness. At the outset it is well to remember that a good many of these cases have structural changes of the bronchial mucous membrane beyond a state of repair. The specialized ciliated epithelium has either been replaced by one of inferior grade, such as the columnar, or there is a hypertropic condition of the mucous membrane, or even more frequently of the interstitial structure, with its resultant changes of the normal lining. To give drugs in such a condition with the object of cure is readily seen to be fallacious. The most we can do is to ameliorate; cure resting only with the prevention of repeated acute attacks and arresting the structural changes. In spite of the difficulties enumerated, a good deal may be accomplished by the judicious administration of drugs. Routine treatment is not only unscientific but is the surest method to fail. For the cough with abundant expectoration, I have found terebene, minims v to x in capsule, four times daily a most efficient remedy. Creosote, in doses of three to five minims, is at times equally satisfactory, lessening the cough and diminishing the expectoration. Guaiacol carbonate, its derivative, though less active, I frequently prefer because of its easier administration and its less irritating effect upon the stomach. A favorite prescription of mine in these cases is the following:

℞ Codeine sulphate, ...grs. iii-vi;
Strychnine sulphate, ...gr. ⅜;
Guaiacol carbonate, }
Terpin hydrate, .. } .....āā ʒi.
M. Divide in capsulas xxiv.
Sig.: One capsule four times a day.

The oils of copaiba, sandalwood, and tar are often valuable additional remedies. Five minims each of the oils of sandalwood and tar, in capsule, every four hours is at times a useful combination.

Inhalations as an addition to the internal treatment, or as a substitute when the latter irritates the stomach, constitute a valuable measure. Creosote, terebene, or eucalyptus, ten to twenty minims, or compound tincture of benzoin, half an ounce, may be added to a pitcherful of boiling water; the patient covering head and pitcher with a towel, and inhaling the vapor for ten or fifteen minutes at a time. A combination of two or more of these, and the addition of ten to fifteen drops of chloroform is sometimes to be preferred when the cough is distressing. The following is a good formula:

℞ Creasoti, }
Terebeni, } .....āā ʒiss;
Spiritus chloroformi, ...ʒiv;
Tincturæ benzoini compositæ, q. s. ad.....℥ii.
M. Sig.: For external use add one teaspoonful to a quart of boiling water and inhale steam three or four times daily.

When there is little or no secretion, or when the secretion is thick and brought up with difficulty, potassium iodide will render an excellent service. It is most efficient in small doses, three to five grains three times a day, and it is contraindicated in cases of bronchorrhea.

When the cough is not due to a profuse secretion, but to excessive irritability of the bronchial mucous membrane, some sedative will have to be resorted to, such as diluted, hydrocyanic acid, tincture of hyoscyamus, or spirit of chloroform, and when these are insufficient, codeine or heroin are the drugs of choice. I usually employ a combination of these, as in the following:

℞ Acidi hydrocyanici diluti, ...♏xv;
Tincturæ opii camphoratæ, }
Tincturæ hyoscyami, ... } .....āā ʒiv;
Syrupi tolutani, ...ʒvi;
Aquæ, q. s. ad. .....℥ii.
M. Sig.: One or two teaspoonfuls every four hours.

℞ Codeinæ sulphatis, ...gr. iv;
Spiritus camphoræ, ...ʒi;
Spiritus chloroformi, ...ʒii;
Syrupi tolutani, q. s. ad.....℥ii.
M. Sig.: One teaspoonful every four hours.

When any of the opium derivatives are necessary as little as is found to suffice should be used. Due care should be taken not to interfere with necessary cough, and all sedatives should be withdrawn when found practical.

The cough is frequently a disturbing feature at night or in the early morning hours. In the great majority of instances it is not a persistent annoyance, but occurs with acute exacerbations or, quite as frequently, I think, with some general disturbance, such as gastric or nervous irritation, which will usually be found to last a week or more. With due attention to the disturbing factor, some one of the following measures, or a combination of them, has proved useful in my hands; a hot glass of milk, a mustard plaster to the back of the chest until sufficient counterirritation is produced; a teaspoonful of the following mixture in a tablespoonful of hot water:

℞ Sodii bicarbonati, ...ʒiiiss;
Sodii chloridi, ...ʒi;
Spiritus chloroformi, ...ʒiss;
Liquoris anisati, q. s. ad.....℥ii.
M.

Or, when there is profuse secretion the application of several dry cups over the bases of the lungs posteriorly may be of service, and should this fail a quarter or half a gain of codeine sulphate will be found beneficial. With profuse secretion tincture of belladonna, from ten to fifteen minims, every four hours until the desired effect is produced or toxic manifestations are evident, is to be preferred.

Above all, it is important to remember that we are treating a patient, and not a disease; that success lies more with hygienic measures and improvement of the general health than with drugs, and that the old adage "Prevention is better than cure" can find no more useful application.

(*To be continued.*)

Therapeutic Notes.

Treatment of Scabies.—Brocq, in *Quinzaine thérapeutique* for December 25, 1912, states that the first step in the treatment of this condition should be a bath in sulphur water, during the entire duration of which—about fifteen minutes—the body should be vigorously cleansed with soap. This is to be followed by a rubbing with flannel of all areas where burrows are visible, in order to lay these open. The body should then be covered with the following ointment:

℞ Potassii carbonatis, ...gr. xv (1 gramme);
Sulphuris præcipitati, ...gr. xlv (3 grammes);
Adipis benzoinati, ...ʒiii (12 grammes).
M. ft. unguentum.

Twenty-four hours later, a starch bath should be administered, and in order to relieve the skin irritation which may appear, the following preparation applied:

℞ Amyli, ...
Zinci oxidi, ...
Adipis lanæ hydrosi,
Petrolati, ... } .....āā ʒii (8 grammes).
M. ft. unguentum.

This ointment should be used until the skin has regained its normal appearance.

In patients with unusually delicate skins, or in children, the following curative preparation is to be substituted for that already referred to:

℞ Balsami peruviani,
Sulphuris, ... } .....āā gr. lxxv (5 grammes);
Zinci oxidi, ...ʒss (15 grammes);
Adipis lanæ hydrosi,
Petrolati, ... } .....āā ʒvi (25 grammes).
M. ft. unguentum.

This should be rubbed in for three or four consecutive days. If the skin is irritated, starch baths are to be administered.

Thorough disinfection of the patient's clothing is, of course, to be insisted on in every case.

Removal of Warts.—Mantelin, in *Quinzaine thérapeutique* for December 25, 1912, is credited with the following formula for a collodion preparation to be applied to warts:

℞ Chlorali hydrati,
Acidi acetici,.... } .....āā ʒiss (6 grammes);
Acidi salicylici,
Aetheris, ... } .....āā ʒi (4 grammes);
Collodii, ...ʒss (15 grammes).
Misce.

Treatment of Insomnia.—Sir James Sawyer, in the recently issued second edition of his little book, entitled *"Insomnia: Its Causes and Treatment,"* states that while a hypnotic should be prescribed only when this is unavoidable, removal of the cause being an all important measure, in the more severe forms of psychic insomnia, the prompt use of a hypnotic will soon restore to the brain the power of sleeping, without further aid from drugs.

Potassium bromide, given in doses of thirty to sixty grains (two to four grammes), dissolved in water, is the best drug for well nourished patients and in the mild cases generally.

Opium may be given when pain prevents sleep, but is contraindicated in bronchitis and renal disease, and is unsuitable for habitual cases. In severe psychic cases it may act well, thus prescribed:

℞ Opii, ...gr. ss (0.03 gramme);
Saponis, ...gr. ii (0.12 gramme).
M. ft. in pilulam no. i.
Sig.: One or two to be taken at bedtime.

Hydrated chloral is very frequently used, but has various well known disadvantages. A combination of hypnotics sometimes acts more successfully than any taken singly. Thus, chloral and bromides may be given together, or both may be combined with opium:

℞ Tincturæ opii, ...♏v-x (0.3-0.6 c. c.);
Potassii bromidi, ...gr. x-xx (0.6-1.3 grammes);
Chlorali hydrati, ...gr. v (0.3 gramme);
Syrupi, ...ʒss (2 c. c.);
Aquæ menthæ piperitæ,.....q. s. ad. ℥iss (45 c. c.).
M. ft. haustus.
Sig.: To be taken at bedtime.

In insomnia complicating heart disease, Hale White advises the use of twenty-five grains (1.6 gramme) of chloroformamide, dissolved by stirring in one ounce of brandy, with water added to taste, taken about one hour before bedtime. This drug possesses, however, a disagreeable taste.

Sulphonmethane and sulphonethylmethane are active hypnotics, though unsafe in the presence of renal disease. Neither should be given for more than a few nights consecutively. Sodium bicarbonate, from twenty to thirty grains (1.3 to two grammes) should be given during the day in this period.

Paraldehyde, given emulsified with yolk of egg, and diethylbarbituric acid, cautiously administered in cachets or in pills with syrup of glucose as excipient, in doses of three to fifteen grains, are other good hypnotics.

In the toxic insomnia of gout or chronic renal disease, with a high tension pulse, the following combination is useful:

℞ Magnesii sulphatis effervescentis, ℥ss (15 grammes);
Potassii et sodii tartratis, ...℥i (30 grammes);
Acidi citrici, ...gr. xl (2.6 grammes);
Acidi tartarici, ...gr. l (3.3 grammes);
Sodii bicarbonatis, ...gr. C (6.6 grammes);
Sacchari, ...gr. xxx (2 grammes).
M. ft. pulvis. Sig.: One or two teaspoonfuls to be taken in half a tumblerful of water every morning before breakfast.

In toxic insomnia due to habitual constipation and undue fecal retention, the cure of the latter must be aimed at. If laxative drugs are required, the following will prove useful:

℞ Aloes, ...
Extracti glycyrrhizæ,
Extracti taraxaci, ..
Saponis mollis, ... } ..singulorum partes æquales.
Solve in aqua, et calore lente inspisse; deinde divide in pilulas, pondere 2½ gr.
Sig.: One or two pills to be taken at bedtime.

Senile insomnia is very obstinate. Often the bromides, with full doses of hops or of henbane, afford the most efficient and least harmful medicinal means of relief. Arterial gymnastics may be indicated.

Treatment of Seborrhea of the Lid Margins.—Roemer, as recorded in the recently issued translation of his "Textbook of Ophthalmology," states that while seborrhea of the lid margins follows an extremely chronic course and usually persists in a slight degree throughout life, it can be ameliorated and often overcome for a long time by proper treatment. Such general conditions as anemia and scrofulosis should be corrected first; then the patient should be impressed with the importance of cleansing the lid margins night and morning. Before retiring an ointment should be applied to the cleansed and dried margins. Yellow ointment is often too irritating; sometimes the simple boric acid ointment is sufficient. Another that may be prescribed is the following:

℞ Sulphuris præcipitati, ...gr. xv (1 gramme);
Vel Resorcinalis, ...gr. viiss (0.5 gramme);
Zinci oxidi, }
Amyli, ... }.....āā ʒiiss (10 grammes);
Petrolati, ...ʒv (20 grammes).
M. ft. unguentum.

Where the scales are adherent one may, with due care, employ a sharp spoon for the first thorough cleansing. Any coexisting chronic conjunctival catarrh must, of course, receive appropriate treatment.

Treatment of Hemorrhoids.—E. Barié, in *Paris médical* for February 8, 1913, is credited with the following ointment for hemorrhoids:

℞ Extracti belladonnæ }
foliorum, ... }..āā gr. viiss (0.5 gramme);
Tincturæ opii, ... }
Potassii iodidi, ...ʒss (2 grammes);
Extracti krameriæ, ...ʒi (4 grammes);
Petrolati, ...℥i (30 grammes).
M. ft. unguentum.
Sig.: Apply morning and evening.

Treatment of Local Reaction Succeeding Intramuscular Salvarsan Injection.—J. E. R. McDonagh, in his monograph on *Salvarsan in Syphilis and Allied Diseases,* states that the swelling which sometimes results from intramuscular salvarsan injections is a toxic edema, and as a rule is not painful. Under no circumstances should it be opened, unless an obvious abscess forms, when acute pain is noted. Alternate hot and cold applications give the most relief, and when the patient is up and about a belladonna plaster helps to diminish the pain and increases absorption. The redness which appears with the swelling is analogous to that met with in urticaria, and quickly disappears if the following lotion be applied:

℞ Plumbi subacetatis, ...gr. x (0.6 gramme);
Aquæ ammoniæ fortioris, ...♏v (0.3 c. c.);
Alcoholis, ...ʒi (4 c. c.);
Liquoris alumini acetatis (N. F.),....ʒiii (12 c. c.);
Aquæ, q. s. ad.....℥i (30 c. c.).
M. ft. lotio.

Treatment of Landry's Syndrome.—Pic, Bonnamour, and Blanc-Perducet, in *Lyon médical* for January 26, 1913, report a case presenting most of the symptomatic manifestations of Landry's paralysis, including marked ascending paresis of the extremities, paralysis of the velum palati, dysphagia, diplopia, slight nystagmus, and later facial paralysis, in which injections of strychnine sulphate in full doses gave unexpectedly good results. Two subcutaneous injections of 0.005 gramme (1/10 grain) each were given on twelve successive days, with the result that paralysis in the palate, facial muscles, and limbs—especially the upper extremities—disappeared with considerable rapidity. After cessation of the strychnine injections because of restlessness and twitchings, improvement of power and coordination in the limbs also came to a standstill, notwithstanding electricity and massage. Finally, systematic motor reeducation was undertaken, much as in tabes dorsalis, with the result that three months and a half after admission the patient could walk fairly well, atrophy had largely disappeared, and musclesense was restored. The authors conclude that after the acute stage is over no measure is as effective in these cases as motor reeducation.

Treatment of Leprosy.—Jeanselme, at a meeting of the Société française de dermatologie et de syphiligraphie (*Presse médicale,* March 12, 1913), stated that he had had good results in leprosy with intramuscular injections of the following mixture:

℞ Oil of chaulmoogra, ...ʒv (20 grammes);
Guaiacol, ...gr. xv (1 gramme);
Camphor, ...gr. viiss (0.5 gramme);
Liquid petrolatum, ...ʒv (20 grammes).
Fiat mistura.

The chaulmoogra oil should first be washed with alcohol and filtered through cotton. The other ingredients are then added, the preparation sterilized at 110° C., and sealed in 5 c. c. ampoules. The product is a homogeneous fluid which remains clear indefinitely. Injections of it do not cause much pain.

Treatment of Acute Pharyngitis.—A writer in *Pediatrics* for January, 1913, emphasizes the fact that in the local treatment of this affection the remèdies that do harm are numerous. In the early stages—during the first five days—all astringents, however mild, are contraindicated. The thoughtless prescription of ferric chloride is to be deprecated. After the early stage is passed, should the tissues seem boggy and the circulation sluggish, a twenty per cent. silver nitrate solution may be applied with a swab and washed off with salt solution. The early local treatment should be simply detergent and antiseptic. Infants may be given a weak solution of sodium bicarbonate and salt to drink; a purge should also be administered, and due attention paid to the diet. In older children, gargles of salt, soda and boric acid are rather useful, but with these, as with older patients, the best mode of cleaning the pharynx is the douche, the patient's head being allowed to hang over the edge of a bed or table, and a warm solution run in a gentle stream into the wide open mouth from a fountain syringe. This should be done from two to eight times a day, or even oftener. The outflow from the mouth should be disinfected.

The general treatment in acute pharyngitis should be "sustaining." Possible renal irritation should be borne in mind, and no food allowed that may tax the kidneys. A milk diet with suitable stimulation is usually indicated. For fever, cold baths, the cold pack, or cold affusions may be employed, not so much for antipyresis as for nervous stimulation. All cases should be isolated.

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THE TUBERCULINLIKE ACTION OF ANTITYPHOID VACCINE.

In our issue of April 5th we called attention to Vincent's observation that his antityphoid vaccine acted like tuberculin in stimulating latent or quiescent lesions into the active stage. We urged that until the facts are published impartially, the medical profession should hold the matter of compulsory vaccination in civil life *sub judice*. On behalf of the War Department, Lieutenant Colonel J. R. Kean, of the Medical Corps, in a letter to the editor (see our issue of April 19th, page 848), expressed the belief that our interpretation of Vincent and Combe's observations, suggesting dangers that we deemed entitled to attention, was not justified; adducing as main evidence the vast experience on record in the office of the Surgeon General of the Army, which covers more than one hundred thousand immunizations.

In defense of our position we may submit that the surgeon general's own Annual Report for 1911 contains testimony which tends to convince us that our plea for prudence in the prophylactic use of antityphoid vaccine in civil practice is well grounded. The report states:

In one case only does the reaction merit special comment. The man was stationed at Fort Casey (Register No. 2250), and on March 30, 1911, he received the first dose of vaccine, a severe reaction developing, which necessitated his admission to the post hospital. He had chills, a temperature of over 103° F., sweats, and great prostration. After four days he had apparently recovered entirely and was returned to duty, but after a week he again had chills, fever, cough, and night sweats, and a small amount of mucopurulent expectoration. At this time the physical examination showed dullness at the right apex and a few moist râles over both apices, and a diagnosis of pulmonary tuberculosis was made. This case indicates that the injunction in the circular of instructions against the vaccination of any but healthy persons should be constantly borne in mind.

Again, we might suggest that the physical examination to which recruits are submitted and the out of door life soldiers lead place them in a far more advantageous position for the nondevelopment of tuberculosis than do the occupations and sanitary conditions of large cities to which the inhabitants of such great centres are subjected. The injunction to vaccinate none but the "perfectly healthy and free from fever at the time," while it might apply to soldiers who are under constant supervision, would prove inadequate in civil practice, where the vaccinated would, in practically every instance, be newcomers. Again, does tuberculosis in its incipient form always give rise to fever or to detectable signs? We do not inveigh against antityphoid vaccination in the army, especially when the fact is borne in mind that typhoid fever is the scourge of camp life, and, in the presence of the skill and care of which our troops are the beneficiaries at the hands of their medical officers, but we do hold that in civil life the conditions are such as to inspire the need of greater reserve. This attitude imposes itself forcibly when Vincent's statement that severe reactions are very rare unless tuberculosis is present, is brought face to face with the fact that English and American observers have reported as much as from two to four per cent. of severe reactions, while the general mortality of typhoid fever in the United States is 29.5 per 100,000 (*Mortality Statistics, 1909*, p. 30), or less than one thirtieth of one per cent. In other words, to protect thirty individuals in 100,000 from death from typhoid fever by vaccination we would have to expose 2,000 to 4,000 of them to the possibility of stimulating into activity dormant or latent tuberculosis! While the latter disease would doubtless develop in but a small proportion of those exposed, the fact remains that great prudence is in order when the use of antityphoid vaccine in civil life—which includes a multitude of overworked and underfed individuals who labor in sweatshops, mills, and other foci of tuberculous infection—is advocated, even though the question of its adoption in the United States Army is no longer *sub judice*.

MINING DISASTERS.

The appalling tragedy which occurred last week in the Finleyville, Pa., coal mine recalls vividly that at the joint session of the American Economic Association with the American Association for Labor Legislation, in which safety and health in the mining industry was discussed, Dr. John R. Haynes demonstrated that national regulation in European coal mines had enormously reduced the fatality percentage in the last fifteen years; whereas in these United States during the same period the rate had steadily increased. Moreover, the death rate in various States had varied tremendously from 2.25 in Illinois to twenty-one out of every 1,000 miners, for the year 1907, in Colorado; this latter proportion being more than twenty times the fatality rate for Belgium or France. State regulation of mining having failed in the past, Doctor Haynes considers that there is no likelihood of improvement in the future. "Under State regulations during the last twenty years 30,000 coal miners have been killed and 80,000 seriously injured. We kill every year more than all the rest of the world beside. Both common sense and humanity demand that the federal government safeguard the life of the miner as it has, in recent years, safeguarded the life of the railroad worker."

Dr. J. A. Holmes, director of the United States Bureau of Mines, has found among the possible death dealing agencies: The character of the explosives used in certain mines; the excess in quantity of the explosives which may ordinarily be used with safety in the presence of dust and gas; the quality of the gas and its dangerous percentages; the nature, extent, and insulation of electric currents used; the kind and condition of the miners' lamps; probable underground fissures, determinable by the study of strata from which gas may burst out as it did in the case of the Finleyville disaster.

Of peculiar interest also to physicians is the character and the relative amount of the dust in mines. Though miners suffer greatly from anthracosis, they are strangely enough less prone to tuberculosis than any other class of men—even than bankers and the clergy. Stone cutters, for example, have a forty-five per cent. tuberculosis mortality; while miners (according to Hoffman) have but a six per cent. mortality from this disease. But the observation obtains only of "wet" mining; and several reasons have been forthcoming (none of them quite conclusive) for this comparative immunity, that miners are picked men to begin with, their work precluding all of poor constitution; that there is an antiseptic property, inimical to the tubercle bacillus, in the coal dust; that in "wet" mining the point of saturation is so nearly reached as to make impossible the desiccation and the dissemination through the atmosphere of tubercle bacilli.

But dry mining is an altogether different state of things; here the tuberculosis mortality is high, as it is in all dust evolving occupations. In England the mortality is very high for miners of tin, copper, and lead; while coal miners show varying rates—but all low—in different coal fields. In the South African gold fields there has been a dreadful mortality due to the lack of precautions against dust dissemination. Wherefore, to the end that dry mining should be converted, by means of jets and sprays, into wet mining, the Transvaal Chambers of Mines some years ago invited an exhibition in which, among other machines, were demonstrated the water drill of Leyner and the Britten apparatus—which latter, while laying the dust—we may add—disposes also of the nitrous fumes generated in the blasting.

THE ABUSE OF MORPHINE AND COCAINE.

According to Martin Gilbert and Murray Galt Motter the use of cocaine and morphine in the United States is out of all proportion to the actual needs for these drugs. Their researches concerning the laws and regulations in force in the United States relating to the possession, use, sale, and manufacture of poisons and habit forming drugs have been embodied in a special report (*Public Health Bulletin* No. 56) by the surgeon general of the Public Health Service. From this we learn that there has been an annual importation of over 400,000 pounds of opium for the past ten years. Of this total 300,000 is manufactured into morphine, and more than three fourths of the morphine is used by the victims of that habit. Cocaine, which should be only in the hands of doctors and dentists and never prescribed by the latter, is consumed illegitimately at the rate of over 150,000 ounces every year.

Of course the importation of these drugs is under federal control at its initial entry into the United States, but as each State has its own laws controlling the manufacture and sale of drugs within its own borders, the government is powerless to deal with the situation, deplorable as it is. There is an extraordinary lack of conformity in the laws controlling narcotics enacted by each State. Thus, it is possible to buy large quantities in a State which has lax laws and to carry it for consumption into a State practising rigid restrictions, with absolute impunity. In no State has the legislation intended to abolish the drug habit kept pace with the increase of the drug victims. Thus the President (S. Document No. 736, 61st Congress) says: "The

enormous misuse of opium and other habit forming drugs in the United States may be attributed to several causes: Carelessness or ignorance on the part of the people; to ineffectiveness of State laws, as well as the inability of the States with good laws to protect themselves against the clandestine introduction of the drugs from neighboring or distant States, and therefore in a larger sense to the lack of control by the federal government of the importation, manufacture, and interstate traffic in them."

When we consider that Austria-Hungary, with less than half our population, consumes annually less than one hundredth the amount of opium we use; that Germany, with 60,000,000 inhabitants, uses only about one twenty-fifth as much as we do; that in Italy, with 33,000,000 inhabitants, the annual consumption of opium is about 6,000 pounds in comparison with our 400,000 pounds, we must realize that matters affecting the health of the nation at large should be controlled by laws made by Congress and executed by federal authority instead of individual States.

INTRAVENOUS INJECTION OF NEOSALVARSAN IN CONCENTRATED SOLUTION.

Recent experiences have shown the advisability, in the intravenous administration of salvarsan, of employing freshly distilled and sterilized water for the preparation of the solutions to be injected. Another necessary precaution has been that of using normal saline solution, in order to avoid destruction of the corpuscles by laking when the fluid is introduced. In view of the fact that the sodium chloride used and the lead, lime, and other bodies that may be present in the distilled water itself have been considered responsible for some of the untoward phenomena closely following salvarsan (or neosalvarsan) injections, Revaut has adopted the plan of administering neosalvarsan in the smallest possible quantity of distilled water, thus doing away with both the sodium chloride and, in large measure, the harmful constituents of distilled water.

In a recent communication on this subject Revaut (*Presse médicale*, April 2, 1913) states that he has recently been injecting as much as 0.9 gramme of neosalvarsan dissolved in only eight or ten cubic centimetres of distilled water. With this procedure, the neosalvarsan itself supplies the required isotonicity with the blood. Distilled water prepared several weeks before and kept in ampoules of the highest quality glass can be used directly without causing any systemic reaction. The solution is prepared after the constricting band has been applied to the patient's arm and the skin cleansed with alcohol. The drug is merely dropped into the water, and the solution drawn up into the glass syringe through a special glass tube containing a small wad of cotton, for purposes of filtration. The needle is then adapted to the syringe, air driven out, and the injection at once given. All rubber tubing is thus eliminated and a more strict asepsis rendered possible. The whole procedure of preparation and injection occupies only two minutes. The author has given 420 such injections without the least untoward result.

SEWAGE DISPOSAL OF GREATER NEW YORK.

The sewage disposal of the Greater City of New York has become so vital a question, that it should be solved immediately and the preparatory work already done brought to a practical culmination. To study the subject as a whole, a commission was appointed some time ago which has published several reports. The latest of these is a critical review of the projects. These may be divided into four schemes: The first scheme refers to a system of land sewage, that is to say, broad irrigation and intermittent filtration. Such a plan would necessitate the acquisition of a large area of land. The best example of this system is the Berlin farm, which is the largest of its kind in Europe and continues to do good work. But in New York such a farm would necessarily have to be so colossal that the physical conditions for perfect operation would not be invariably favorable. It would necessitate 150 square miles of land, which would bring with it a great outlay. The second scheme refers to filtration of the sewage through biological filters—a method introduced by the Massachusetts Board of Health and exemplified by the irrigation plant at Barren Island. The aftereffects of the evaporation of the immense amount of foul liquid is very obnoxious, however, and this, together with the cost, makes it nearly prohibitive for such a large city as New York. The third scheme treats of the disposal of sewage by chemicophysical methods at various points of the outfall with ultimate disposal of partially purified liquid into the nearest water courses. Finally, the fourth scheme refers to the conveyance of a large part of the sewage out to the Atlantic Ocean to an island situated north of Sandy Hook, at a distance of about four miles from Coney Island, the sewage requiring under these conditions a minimum of treatment. To give an idea of the outlay necessary we may mention that the cost of a single one of these four plans varies between $100,000,000 and $200,000,000.

PAROVARIAN CYST IN A CHILD.

Frederick Deane, a visiting surgeon to the Barbados General Hospital, reports in the *Lancet* for March 29, 1913, the case of an eight year old girl who presented a rapidly growing tumor in the region of the umbilicus, which was declared by several physicians to be due to worms. On opening the abdomen in the middle line, he found a thin walled cyst distended almost to bursting. He tapped this and delivered the sac, finding the pedicle adherent to the uterine appendages on the left side in the vicinity of the parovarium. The child sat up in bed the next day and subsequently made an uninterrupted recovery.

Obituary.

CHARLES H. KNIGHT, M. D.,
of New York.

Dr. Charles H. Knight, the well known laryngologist, died on April 29th at his home, 55 East Ninety-third Street. He was born in Easthampton, Mass., in 1849, and made his preliminary studies at Williston Seminary and at Williams College. After a four years' course, he graduated at the College of Physicians and Surgeons, in New York, where he has since practised. Doctor Knight was professor of laryngology in the Cornell Medical School and a director and surgeon of the Manhattan Eye, Ear, and Throat Hospital. He was an authoritative writer on laryngology and author of several medical works, and was also a contributor to the NEW YORK MEDICAL JOURNAL. He was greatly esteemed by his friends and fellow practitioners.

News Items.

Changes of Address.—Dr. Louis L. Hoff, from Springfield, Mass., to Rooms 207-209 Phœnix Building, Holyoke, Mass.

$200,000 for Cancer Research.—Under the will of Henry Rutherford, who died in New York on February 25th, the Rockefeller Institute for Medical Research will receive $200,000, which is to be used, according to the terms of the will, "to investigate into the causes and nature of cancer and methods of its prevention and treatment."

Jubilee Meeting of the Medicolegal Society.—A special programme has been prepared for the May meeting of this society, to be held at the Waldorf-Astoria on the evening of the 21st, to celebrate the thirtieth anniversary of the founding of the *Medicolegal Journal*. Dr. T. D. Crothers, president of the society, will be present and receive the contributions of the members.

Honors for New York Physicians.—Dr. Alexis Carrel and Dr. H. Noguchi, of the Rockefeller Institute for Medical Research, Dr. Herman M. Biggs and Dr. William H. Park, of the Department of Health, and Dr. John W. Brannan, president of the board of trustees of Bellevue and allied hospitals, have been made knights of the Royal Order of Isabella the Catholic by King Alfonso of Spain.

Civil Service Examinations in Philadelphia.—Among the positions for which the Civil Service Commission of the City of Philadelphia will hold examinations on May 26th, are the following: Head Nurse, Philadelphia General Hospital, salary $300 to $600 a year; head nurse, Public Health and Charities Department, salary, $300 to $600 a year; medical inspector of schools, women only, salary $600 a year; assistant physician, resident, salary $600 to $900 a year; assistant physician, resident, $600 to $1,000 a year.

Medical Club of Philadelphia Gives Reception to Judges.—More than five hundred members of the medical profession attended a reception given by the Medical Club of Philadelphia to eminent jurists of the city, on the evening of April 25th. Addresses were made by several guests of honor expressing their appreciation of the honor shown them. Dr. James M. Anders read a memorial of the late Dr. Roland G. Curtin, who was once president of the club.

Alabama State Medical Association.—At the annual meeting of this association, held in Mobile last week, Dr. R. S. Hill, of Montgomery, was elected president to succeed Dr. Harry T. Inge, of Mobile; Dr. Hugh W. Blair, of Sheffield, vice-president; Dr. F. A. Webb, of Calvert, junior vice-president. Dr. J. Norman Baker, of Montgomery, was reelected secretary, and Dr. Henry G. Perry, of Greensboro, treasurer. Montgomery was selected as the next meeting place.

Meetings of Philadelphia Medical Societies to be Held during the Coming Week.—Monday, May 5th, Academy of Surgery and the Philadelphia Clinical Association; Tuesday, May 6th, Wills Hospital Ophthalmic Society; Wednesday, May 7th, Directors of the Physicians' Motor Club, and the College of Physicians; Thursday, May 8th, Polyclinic Ophthalmic Society, Pathological Society, and the Obstetrical Society; Friday, May 9th, Northern Medical Association and the Psychiatric Society.

Medical Society of the State of New York.—The 107th annual meeting of this society was held in Rochester on April 29th and 30th and May 1st, under the presidency of Dr. John F. W. Whitbeck. This is the first time in its history that the organization has not met in Albany. Officers were elected as follows: President, Dr. William Francis Campbell, of Brooklyn; first vice-president, Dr. W. Stanton Gleason, of Newburgh; second vice-president, Dr. G. F. Blauvelt, of Nyack; third vice-president, Dr. Myron B. Palmer, of Rochester; treasurer, Dr. Alexander Lambert, of New York, reelected; secretary, Dr. Wisner R. Townsend, of New York, reelected.

German Measles in New York.—A report issued by the Department of Health of the City of New York shows that during the past three months there has been a marked increase in the number of cases of German measles reported to the department. During the first quarter of 1913, 965 cases were reported in Manhattan, 609 in Brooklyn, and 233 in the Bronx, while during the entire year of 1912, 697 cases were reported in Manhattan, 633 in Brooklyn, and 182 in the Bronx. Previous to 1904, German measles was not a reportable disease, for the reason that, although contagious and frequently attended by a well marked eruption, the disease never resulted in death.

Medical Society of the State of California.—At the forty-third annual meeting of this society, held in Oakland on April 15th, 16th, and 17th, under the presidency of Dr. O. D. Hamlin, the following officers were elected: President, Dr. Fitch C. E. Mathieson, of Pasadena; first vice-president, Dr. Barton J. Powell, of Stockton; second vice-president, Dr. George Rucker, of Riverside; secretary, Dr. Philip Mills Jones, of San Francisco, reelected; councillor for the second district (reelected), Dr. George H. Kress, Los Angeles; councillor for the sixth district (reelected), Dr. C. E. Kenyon, San Francisco; councillor for the eighth district (reelected), Dr. James H. Parkinson, Sacramento; councillor-at-large, Dr. O. D. Hamlin, Oakland. Committees were also named. Next year's meeting will be held in Santa Barbara.

Postgraduate Course in Medicine at McGill University.—Announcement is made by the medical faculty of McGill University that courses in medicine have been arranged for graduate students, between May 26th and June 20th, at the Montreal General and the Royal Victoria Hospitals, and in the laboratories of the Medical School. These courses are optional and independent and are open to graduates of all medical schools in good standing. They include work in clinical surgery, operative surgery, clinical medicine, ophthalmology, otology, laryngology, rhinology, otolaryngology, orthopedic surgery, genitourinary surgery, pathology, gross pathology, radiography, and electricity, pediatrics, and immunity. The number of students in the course in immunity will be limited to six. All postgraduate students are required to register with the Registrar of the Medical Faculty, to whom application should be made for further particulars regarding the course.

Dartmouth College Abandons Its Medical Course.—It is reported that after the graduation in 1914 of the present junior class of the medical department of Dartmouth College, Hanover, N. H., the college will cease to grant the degree of M. D. According to present plans, the first two years of the course in medicine will be given in a department which leads to the degree of B. S., and it is intended that those who do this work successfully will be able to enter upon third year work in medicine in any medical college. It is said that this action on the part of the trustees was rendered necessary by the lack of clinical material, due probably to the isolated position of the college. The Dartmouth Medical School was established in 1798, the fourth in the United States. The one hundred and seventeenth graduation exercises were held on April 25th, ten degrees being conferred.

Medical Alumni Dine.—The annual dinner of the Society of the Alumni of the Medical Department of the University of Pennsylvania was held in the Bellevue-Stratford Hotel, Philadelphia, on the evening of April 18th. Dr. William Pepper was toastmaster, and among the speakers were Dr. Richard C. Cabot, of Boston, Dr. S. Weir Mitchell, Dr. Lewis H. Taylor, and Dr. John G. Clark. Previous to the dinner a short business meeting was held, and the following officers elected to serve for the ensuing year: President, Dr. John B. Deaver; vice-presidents, Dr. John K. Mitchell, Dr. Richard C. Norris, and Dr. S. McC. Hamill, of Philadelphia, Dr. Lewis H. Taylor, of Wilkes-Barre, Dr. Casper W. Sharples, of Seattle, Wash., Dr. Walter R. Wieser, of Springfield, Mass., and Dr. Alexander R. Craig, of Chicago; historian, Dr. William Pepper; secretary and treasurer, Dr. G. Morris Piersol.

Hospital Saturday and Sunday Association.—This association has apportioned $105,000 among forty-six non-municipal hospitals in New York, the largest amount by $10,000 ever collected by the association during the thirty-four years of its history. The distribution was based on the number of treatments given to the poor, regardless of race or creed, for which the hospital received no payment either from the patient or from the city. The Montefiore Home received the largest amount of any one institution, $10,500, with a record of 166,036 free treatments. The largest appropriation to a general hospital was $9,129.42, which was given to Mount Sinai Hospital, for 108,943 free treatments. Of special hospitals, the Orthopedic gave the greatest number of free treatments, receiving $4,629.57. St. Mary's Free Hospital for Women and Children received the largest appropriation for this class of hospitals, having a record of 50,333 free treatments, and its share of the total amount is $22,376.

American Gastroenterological Association.—The sixteenth annual meeting of this association will be held in Washington, D. C., on May 5th and 6th, with headquarters at the New Willard Hotel. An excellent programme has been arranged, which will include the following papers: President's address, by Dr. J. Kaufmann, on the Rôle which Functional Disorders Play in the Pathology of the Stomach; Beneficial Effect of Duodenal Alimentation in Cirrhosis of the Liver, by Dr. Max Einhorn; Bacteriology of the Duodenum, by Dr. Arthur F. Chace and Dr. Ward J. MacNeal; Frequency of the Transition of Ulcer of the Stomach into Cancer, by Dr. J. Friedenwald; Clinical Study of the Relation between Gastric Ulcer and Gastric Cancer, by Dr. Frank Smithies; Lymphedema, by Dr. A. L. Benedict; Esophageal Symptoms in Gastric Disease, and Employment of Carmin in Gastrointestinal Diagnosis, by Dr. Seymour Basch; Hyperthyroidosis of Intestinal Origin, and Abdominal Endoscopy, by Dr. J. C. Hemmeter; Early Diagnosis of Cancer of the Esophagus, by Dr. Willy Meyer; Section of the Diaphragm as an Aid in the Exposure of the Thoracic Aorta, by Dr. F. Murphy; Cecum Mobile, by Dr. L. Kast; Polyadenoma Gastrica, by Dr. Jesse S. Myer; Chronic Stenosing Gastritis, by Dr. H. W. Soper; Fluoroscopic Examination versus Clinical Methods in the Diagnosis of Gastric Diseases, by Dr. John Dudley Dunham; X Ray Method in Diagnosis of Gastric and Duodenal Ulcer, by Dr. Franklin W. White and Dr. Ariel W. George; Visualization of Obscure Lesions of the Gastrointestinal Tract by Means of the Röntgen Rays, by Dr. A. Holding; Gastrointestinal Stasis, by Dr. J. A. Lichty. Dr. Franklin W. White, 322 Marlborough Street, Boston, is secretary and treasurer of the association.

Cautions Concerning Cancer Patients.—The Cancer Commission of the Medical Society of the State of Pennsylvania has formulated a series of "cancer axioms," which emphasize the importance of early diagnosis and prompt action on the part of physicians in cases of cancer. These axioms are as follows: 1. Cancer in its early stages is always a purely local disease, permanently curable by complete removal. 2. If you wait to see what develops the cancer may spread beyond hope of cure. 3. Pain and cachexia are not signs of cancer. They are signs only of impending death. Early warning signals of cancer are: 1. Of the breast,—any lump. In a woman over thirty-five it is cancer in 90 per cent. of cases. 2. Of the uterus,—(a) any irregular bleeding; (b) change from an ordinary type of menstruation to a profuse type after thirty-five; (c) onset of a discharge; (d) change from a simple discharge to one that is more profuse, more irritating and fouler. 3. Of the skin, lip, or mouth,—(a) any sore that will not heal; (b) any wart or mole that increases in size or begins to bleed. 4. Of the alimentary canal,—(a) "indigestion" that will not promptly yield to proper treatment; (b) onset of colicky pains or intractable constipation in an individual over thirty-five. Practitioners should make an early diagnosis and act at once.

Personal.—Dr. L. H. Baekeland, of New York, has been selected by the Chicago Section of the American Chemical Society as the recipient of the Willard Gibbs medal, founded by William A. Converse, and the award will be made at the May meeting of the society. The first award of this medal was made in 1911 to Professor Svante Arrhenius, director of the Nobel Institute, Stockholm, and in 1912 it was awarded to Professor Theodore W. Richards, of Harvard University.

Dr. Harold Williams, dean of the medical and dental departments of Tufts College, Boston, has tendered his resignation, to take effect at the close of the present academic year. Doctor Williams was dean of the medical department for nearly fifteen years. In accepting his resignation, the trustees of the college have requested Doctor Williams to allow his name to remain on the faculty list as professor of the theory and practice of medicine and dean of the medical and dental schools, emeritus.

Dr. A. J. Chalmers, of Ceylon, has been appointed director of the Wellcome Research Laboratories at Khartoum, to succeed Dr. Andrew Balfour, who has resigned to become director of the Wellcome Bureau of Scientific Research in London. Doctor Chalmers is best known for his work on the etiology of pellagra.

Professor M. Ficker, assistant professor of hygiene and bacteriology at the University of Berlin, has been given leave of absence for one year, to take charge of the bacteriological institute at Sao Paulo, Brazil, at the request of the Brazilian government.

In Memory of the Late Dr. John S. Billings.—A meeting was held in the New York Public Library on the afternoon of April 25th to do honor to the memory of Dr. John Shaw Billings, who died on March 11th. Many distinguished men were present, who spoke in terms of praise of Doctor Billings as a leader in medical science and in the organizing of medical knowledge, a bibliographer and librarian unsurpassed in the classification of knowledge, and a man of indefatigable energy. John L. Cadwalader, president of the New York Public Library, was in the chair, and with him on the platform were the Right Rev. David H. Greer, bishop of New York; Dr. S. Weir Mitchell, Sir William Osler, regius professor of medicine at Oxford University, Dr. William H. Welch, of the Johns Hopkins Medical College, Andrew Carnegie, Richard R. Bowker, editor of *The Library Journal;* Frederick R. Halsey, George L. Rives, Edward Shelton, George P. Smith, and Frederick R. Sturges, trustees of the Public Library; Edwin H. Anderson, its acting director; E. G. Kennedy, Phœnix D. Ingraham, and Major Henry L. Higginson, of Boston. In the audience were Dr. Abram Jacobi, Dr. Hurd, of Johns Hopkins University, Admiral Alfred T. Mahan, and Dr. George F. Kunz. The first address was delivered by Dr. S. Weir Mitchell, who told of the services rendered by Doctor Billings during the Civil War. Sir William Osler was the next speaker and he said he brought officially the tribute of respect of the Bibliographical Society of England, of which he was president, to the memory of Doctor Billings and his great work.

Pith of Progressive Literature.

CORRESPONDENZ-BLATT FÜR SCHWEIZER AERZTE.

March 1, 1913.

Etiology and Therapy of Osteomalacia and Rhachitis.—S. Stocker found that softening of the bones, similar to that of osteomalacia and rhachitis, could be induced in large animals, such as calves, by the transplantation of ovaries and testicles from other animals into the preperitoneal tissues. Such transplantations succeed under suitable precautions, and the glands continue to secrete in their new locations. The active principle of the secretion of the sexual glands influences the metabolism in such a way that the bones remain soft, i. e., the process of ossification is inhibited. The change in the bone thus induced corresponds to that met with in rhachitis and osteomalacia; hence these diseases may be a consequence of the excessive secretion of the germinal glands, or of a portion of them.

March 15, 1913.

The Recognition and Importance of Arrhythmia.—R. Staehelin divides arrhythmia into five different forms: 1. Respiratory arrhythmia, which may be produced in healthy persons by deep breathing and has no pathological importance. 2. The extrasystole, which is the most common form and varies greatly in importance. It is met with in many men throughout life without indicating that the heart is particularly weak or in danger. It is to a certain degree a physiological phenomenon of old age. Whether it may arise from purely nervous causes or not is uncertain. Certain poisons produce it with more or less regularity, especially coffee and tobacco. There are persons in whom one cup of strong coffee, or a single cigar, suffices to excite extrasystole. Digitalis may do the same. Its importance is much more serious when it appears in the course of infectious diseases; the seriousness is greatest in pneumonia, least in influenza. Finally, it is a regular accompaniment of myocarditis and degeneration of the myocardium. 3. From disturbances of conduction, including complete dissociation of the activity of the auricle and ventricle, a condition long known as the Adams-Stokes syndrome, and partial dissociation of the same. These conditions pass over into each other not infrequently. 4. Arrhythmia perpetua, so named because of the constantly fluctuating rhythm without regularity, and because, as a rule, when it has once started it does not stop. It is usually met with in the last stages of heart disease. 5. The pulsus alternans, which is not arrhythmia in a strict sense, the strength of the ventricular contraction varying in such a way that each alternate contraction is weaker than the preceding, while each alternate pulse wave is small. This is particularly common in the final stages of chronic nephritis, and always has a very grave prognosis.

March 22, 1913.

A Case of Mamilla on the Thigh of a Man.—Rudolf Dietschy reports finding a small mamilla on the thigh of a young man, twenty years old, and gives a brief account of other cases collated from German literature.

March 29, 1913.

The New Method of Checking Hemorrhage and of Treating Wounds with Coagulin Kocher-Fonio.—Anton Fonio asserts to have extracted the constituents of the blood of mammals which accelerate and strengthen the coagulation of the blood, and has named the preparation coagulin Kocher-Fonio. With this he says that the hemorrhage in very bloody operations can be immediately arrested, and that secondary hemorrhages can be guarded against.

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT.

February 6, 1913.

Significance and Accomplishment of Prophylaxis and Early Treatment of Diphtheria.—W. Braun asserts that the serum treatment has a decided value only in the first thirty hours after the beginning of diphtheria. Therefore in doubtful cases we must not wait for the result of a bacteriological examination. The public should be enlightened on this point by lectures, the daily press, etc. All persons who come in contact or are liable to come in contact with the infected person, especially the members of the family, should receive a prophylactic dose of 600 to 1,000 units. The protective action lasts with almost absolute certainty about three weeks and then gradually declines. For the purpose of organizing the fight against diphtheria the medical and civic authorities should cooperate.

Human Trypanosomiasis with Symptoms of Sleeping Sickness.—H. Werner reports the clinical course, findings in the blood, lumbar puncture, and autopsy of a man affected with *Trypanosoma rhodesiense*. Of particular interest were the pronounced symptoms of sleeping sickness, which, according to Sanderson, should have been absent in this type of trypanosoma. Also a marked swelling of the glands shortly before death, an absolute resistance to atoxyl, antimony, and potassium tartrate, and a complete disappearance of the trypanosomes from the peripheral blood eighteen hours before death, which is accounted for by the ante mortem carbon dioxide intoxication of the blood. No eosinophiles were present. A positive result of the phase 1 reaction of the lumbar puncture pointed to an existing pathological change in the central nervous system.

Diagnosis of Bronchial Stenosis.—D. Jacobson says a slowly forming bronchial stenosis brings about changes which give characteristic shadows in the Röntgen pictures. The most noticeable and constant symptom is the inspiratory displacement of the heart and mediastinum to the affected side of the chest the expiration permitting the heart and mediastinum to return to the usual position. This is a compensatory phase in which that portion of the lung attached to the stenosed bronchus cannot expand sufficiently, while the lung on the affected side fills with air in a proportionately greater degree.

Difficult Differential Diagnosis in Gynecology.—A. Sippel strongly advises the use of narcosis and high pelvic position in the examination of difficult gynecological cases.

February 13, 1913.

Development of the Adrenal Cortex.—M. Landau finds that in the human subject the cortex of

the adrenals, like the cerebral cortex, shows a greater number of fissures, and deeper fissures, than in the lower animals. The fissures are the result of a more rapid growth in the first half of fetal life and the deeper furrowing in the second half. It is noteworthy that in the arrested development of the brain a hypoplasia of the adrenal cortex is also noticed.

Further Examinations on the Basis of Abderhalden's Dialysis Experiments.—A. Fauser's results, in examinations made by him, were to the effect that in the majority of the cases of dementia præcox, especially in the hebephrenic type, an imperfect functionating of the reproductive organs has to be accepted, while in the catatonic excitement stage imperfect functionating of the thyroid is evident. In luetic and metaluetic psychoses the entrance of brain material, foreign to the blood, into the circulation seems to have occurred.

Benzol Treatment of Leuchemia.—S. Wachtel states that in cases where benzol is well borne, it produces a retrogression of the leucocytosis, and cites an instance where a reduction of the leucocytes, from 182,000 to 8,000, took place. At the same time the spleen decreased markedly in size, the temperature became normal, and the general condition improved. Leuchemia cannot, however, be said to be cured by benzol.

Action of Luminal.—E. Hartung found that in ordinary insomnia a dose of 0.1 to 0.3 gramme, and in the excitement stage of mania and schizophrenia a dose up to 0.7 gramme, of luminal gave satisfactory results. As it is free from harmful side actions, he believes it can be used advantageously as a substitute for veronal, sulphonal, and scopolamine.

Eventratio diaphragmatica.—K. Motzfeld describes the autopsy of a woman, forty-one years old, in whom eventratio diaphragmatica (protrusion of the abdominal viscera into the thorax) had occurred as a result of relaxation of the diaphragm. During life, a markedly high position of the left side of the diaphragm could be made out. Microscopically the diaphragm showed fatty degeneration. Complete atrophy of the left phrenic nerve was found; but whether this bore an etiological relation to the eventration, or whether the latter was to be considered a congenital malformation could not be decided. A review of similar cases in the literature closes the article.

February 20, 1913.

Pharmacological Principles of Bromide Therapy in Genuine Epilepsy.—H. von Wyss contends that the beneficial action of bromides in epileptics is in all probability due to a low chlorine supply. The smallest dose necessary for the more or less complete suppression of the attacks is the right one. In a patient with well regulated life, and with strict supervision of the sodium chloride intake, this is between two and three grammes. A diet poor in salt, but not salt free, should be given. A large dose of sodium chloride is capable of producing an epileptic seizure in an individual who, in regard to the attack, is just on the threshold of functional activity.

Making Tuberculous Foci Nonpoisonous by Röntgen Rays.—H. Iselin states that the increase in body weight and improvement in the general condition and the local diseased area in patients under treatment for local tuberculosis foci by the Röntgen rays indicates the removal of the poison. How this is accomplished—whether destruction of the tubercle bacilli takes place, whether the toxines produced by the tuberculous process are destroyed or neutralized, or whether antibodies are formed—is a mooted question.

Acute Syphilitic Inflammation of the Kidney in the Early Stage (Nephritis syphilitica acuta præcox).—E. Hoffmann found that in rare cases of syphilitic infection there may occur, simultaneously with the roseola, or even before its appearance, the symptom complex of the severest nephritis, such as very marked albuminuria and widespread edema. The symptoms may develop gradually or very rapidly. In the catheterized urine the spirochetes are found. The cure of the syphilitic nephritis, which may be superimposed upon an already impaired kidney and is characterized by a specific alteration of the glomeruli, is best accomplished by a carefully combined mercury salvarsan course of treatment.

February 27, 1913.

The Influence of Iodine Medication on the Sputum Phagocytosis of the Tubercle Bacilli.—D. Rothschild asserts that the potassium iodide catarrh which follows the administration of the drug in tuberculous patients often permits the finding of the bacillus in cases in which it could not be produced previously. The bacilli are then usually intracellular. This evidently increased phagocytosis, whether the result of iodine treatment or not, appears usually in clinically favorable cases. Good results have been obtained with a combination treatment of iodine and tuberculin.

Combined Salvarsan Mercury Treatment of Lues.—G. Stümpke believes that the superiority of the combined treatment by salvarsan and mercury is being shown day by day. Further, that the intravenous and intramuscular injection of salvarsan in the same individual seems to be more efficacious than the single method. In thirty-five out of fifty-one cases in the primary stage with a negative Wassermann reaction, the appearance of the secondary symptoms was delayed for a period of three months, time thus being given for clinical observations. In the treatment of tuberculous syphilitics this combined method has given good results.

Experimental and Clinical Actions of Hormonal.—P. Sackur says that the albumin free Zuelzer's hormonal seems to be devoid of pressure diminishing action when at least fifteen minutes is taken to inject the twenty c. c. of the original bottle very slowly. The stimulating peristaltic action of the hormonal, which in the rabbit is very evident, but hardly present in the cat or dog, has given excellent results in many cases of paralytic ileus, postoperative paresis, and simple atonic constipation. The drug should not be given in cases of mechanical obstruction of the bowel. In cases of, this kind there occurred severe diarrhea (after operative removal of the obstruction) as an after action of the hormonal.

ZENTRALBLATT FÜR CHIRURGIE.

March 15, 1913.

Joint Anesthesia.—Carl Deutschländer finds that the direct injection of anesthetic solutions into the cavity of the joint is of little use for the production of satisfactory anesthesia for long operations, unless the blood is first expelled. If the blood is not expelled the synovial membrane absorbs the anesthetic so rapidly that its effect is soon lost. He employs Bier's method of vein anesthesia for rendering the joint bloodless. The bandage must be applied accurately, for its inefficent action brings disappointment. The injection is then made into the joint, not into the synovial membrane. In a large joint two injections are made at different points. If the synovial membrane is destroyed to such an extent that it cannot absorb the anesthetic, little if any anesthesia will be produced; therefore this method should not be tried when the interior of the joint has been totally destroyed. The method is not applicable to joints like the hip and shoulder, from which the blood cannot be effectually expelled. The skin has to be anesthetized separately.

Are Wound Infection and Long Continued Constriction Contraindications to the Suture of Arteries?—Wilhelm Danielsen reports a case in which a boy, sixteen years old, received a stab wound in the shoulder. The wound was infected, and a rubber tube had been twisted, for some five hours, about the shoulder to arrest the bleeding from the axillary artery. The arm was livid and cold. In spite of these conditions the artery was sutured with a good result, the arm being saved.

CENTRALBLATT FÜR ALLGEMEINE PATHOLOGIE UND PATHOLOGISCHE ANATOMIE.

March 15, 1913.

A Case of Anemic Infarct of the Small Intestine.—W. R. Meyer reports a case of this unusual condition occurring in a man of seventy. The arteries of the intestine showed an old obliterating endarteritis that had caused an acute thrombosis. The veins likewise showed a similar condition. As a result of both the venous and arterial thrombosis an enemic infarct had resulted.

March 31, 1913.

The Excretion of Hemoglobin by the Kidneys.—Ribbert, on further investigation, reiterates his opinions as stated on previous occasions. He holds to the view that in normal or only slightly changed kidneys the hemoglobin is excreted solely through the glomeruli. If, however, the organ has undergone marked changes, some hemoglobin may pass through the epithelium of the tubules.

LYON MÉDICAL.

March 23, 1913.

Iron Content of the Viscera in Various Pathological Conditions.—J. Chalier, L. Nové-Josserand, and Boulud found, by macroscopical chemical methods, that in pernicious anemia there is a constant and marked siderosis or deposit of iron in the spleen and liver. In pulmonary tuberculosis siderosis is constant in the spleen, but very slight or absent in the liver, even though the latter is cirrhotic. In nontuberculous cirrhosis there is siderosis in both spleen and liver, usually predominating in the latter. In cardiac and renal affections the spleen is usually, and the liver always, free from iron pigment. In general, the spleen and liver are the chief organs showing siderosis, though sometimes the pancreas, thyroid, and lymphatic glands also contain iron pigment. The condition of the liver tissue does not govern the degree of siderosis in this organ, for there occur cirrhoses without iron pigmentation, and on the other hand, cases of pernicious anemia with marked hepatic siderosis, but undegenerated liver tissue. The authors believe visceral siderosis to be always of hemolytic origin. That this hemolysis takes place primarily in the spleen is indicated not only by the fact that the iron deposits are frequently limited to this organ, but by experiments in dogs injected with toluylene diamine, in which, upon comparative examination of blood serum obtained from the splenic vein, splenic artery, and jugular or femoral vein, hemoglobinemia, whenever present, was found always far greater in the serum from the splenic vein than in the other specimens.

PRESSE MÉDICALE.

April 2, 1913.

Technic of Intramuscular Injections of Salvarsan in Syphilis.—F. Balzer has witnessed no serious untoward effects from intramuscular injections of neosalvarsan in oily suspension, and believes this method as safe for general use as similar injections of calomel or metallic mercury. To minimize pain the amount to be injected—generally 0.3 gramme—is administered in two places. The first two injections are given in the lumbar region, just above the iliac crest, the second injection being made one and a half or two centimetres above the first. The patient lying on a bed in the prone position, with the arms extended, he is told to contract the dorsolumbar muscles, when, after due cleansing of the skin with alcohol, the needle is inserted perpendicularly at the most salient point of the muscles, to about one half the depth (thickness) of the latter. A small wad of cotton is introduced into the butt end of the needle to detect any escape of blood, owing to vascular injury, and if none appears, the sterile syringe barrel, into which the oily suspension has just been poured from its ampoule, adapted to the needle, and the injection made. Upon quickly withdrawing the needle, pressure is made over the puncture and a small piece of diachylon plaster applied. Five or six injections can be given in each dorsolumbar region; when the buttock is used, its upper and outer segment should be selected. The amount of oil injected at each sitting is only one cubic centimetre—one half at each injection. The pain is scarcely ever sufficient to deter patients from returning for regular weekly treatment. From four to six injections of 0.3 gramme are generally sufficient. Balzer does not approve of ascending doses except where there is urgency. Mercury is then given, followed by two series of three or four neosalvarsan injections in the first year after the beginning of treatment. Additional series should be given in the succeeding three years.

Congenital Esophageal Stenosis.—Guisez reports four cases of this nature, all in male subjects and all with the stenosis at the level of the cardia. The treatment consisted in relieving the esophagitis.

then dilating the contracted portion, and usually performing esophagotomy or circular electrolysis.

April 5, 1913.

503 Cases of Spinal Anesthesia by Jonnesco's Method.—Dimitrion and Saghinesco report results obtained with stovaine-strychnine anesthesia in a Rumanian military hospital. Most of the cases were operated in for hernia, hydrocele, or varicocele; only two cases of high (dorsal) anesthesia are included. The authors advise the use of a relatively narrow needle, not exceeding five to six centimetres in length. The technic they followed was exactly that of Jonnesco, though the dose of stovaine was in some cases reduced from 0.04 to 0.03 gramme, with resulting equally satisfactory anesthesia. The authors assert that idiosyncrasy plays no part in spinal anesthesia; all failures are due to faulty technic. Where anesthesia is incomplete, the authors send the patient back to bed and do not operate until from three to five days later, when the anesthesia invariably proves satisfactory. Where anesthesia fails to appear in ten minutes, a second puncture is made. The stovaine used is secured in ampoules, and has been previously purified. With this preparation untoward aftereffects are reduced to a minimum. Headache occurs in only one fifth of the cases, and is so mild as to require no analgesic, while fever and epigastric pain are rare. No late complications have been noted. The authors are enthusiastic concerning the future of spinal anesthesia.

REVUE MÉDICALE DE LA SUISSE ROMANDE.

March, 1913.

Considerations on the Treatment of Syphilis with Ehrlich's Remedy.—Dind studied the cerebrospinal fluid obtained through 135 lumbar punctures in 115 syphilitic patients, and found that, while during the early portion of the primary stage no abnormalities are present, the pressure of the fluid and lymphocyte count show changes, sometimes very marked, in the preroseolic period and, especially, in the early secondary period. These in reality correspond to a meningoencephalitis, and are sometimes accompanied by significant symptoms of nervous involvement, such as headache, vertigo, hyperacusia or hypoacusia, and evidences of paresis or paralysis of the oculomotor or facial nerves. In the late secondary, tertiary, and quaternary periods the diffuse meningoencephalitic phenomena become attenuated and a tendency to localization of the disease is observed. From seven cases, in each of which two or more lumbar punctures were practised, before and after repeated salvarsan injections, the author concludes that the nervous condition is probably favorably influenced by this remedy. The so called "neurorecurrences" are looked upon by Dind as evidences of diffuse or localized syphilitic meningitis, rather than of the action of salvarsan. These disturbances can be cured or improved provided they are detected early, through close observation of the patient, including the cerebrospinal fluid, and combated promptly and persistently. Dind has given altogether 1,800 injections of salvarsan in 650 patients, and has seen more or less serious untoward effects in only three instances. He lays stress mainly on gastrointestinal disturbances and erythematous rashes among the unfavorable symptoms arising from salvarsan idiosyncrasy, and also states that nervous and cardiovascular disease need not be invariably considered a contraindication to salvarsan treatment.

An Early Sign of Pericarditis.—G. Turrettini calls attention to the abnormally sharp, ringing character of the second heart sound at the pulmonic area occurring as a precursor of pericardial friction in affections such as acute rheumatism or Bright's disease complicated with pericarditis. This sign was first referred to in 1894 by Josserand, but escaped general notice. Turrettini observed it in two cases, one due to Bright's disease and the other to advanced tuberculosis with pneumothorax, and in each instance diagnosticated pericarditis correctly before the friction rub had appeared. Two other patients, in whom pericarditis arose by transmission of the infective agent from the pleura through the lymphatics, did not present the sign. Josserand's original explanation of the sharpened second pulmonic sound, viz., that the sound originates from closure of the valve leaflets owing to inflammation at the infundibulum of the pulmonary artery, seems plausible. The sign may prove of value, not only in permitting of earlier treatment of a beginning pericarditis, but also in assisting the physician to determine the portal of entry of infection into the pericardium.

Clinical Value of Much's Method of Staining Tubercle Bacilli in Sputum.—A. Cramer, from a review of the work already done by various authors, believes it justifiable to conclude that the granulations of Much and the "splitter" of Spengler are similar forms of the tuberculous virus which appear whenever the medium becomes unfavorable to the development of the tubercle bacillus. Under these conditions the bacilli disintegrate and the resulting granulations can be stained by Much's modified Gram method. In a comparative study of the Much and Ziehl procedures in about fifty cases of lung tuberculosis, the latter method was found in fifteen cases to show a larger number of bacilli than the former. In some other cases the Much examination proved wholly negative, though the Ziehl showed bacilli, while in a second series of examinations fifteen cases were noted in which the Much gave positive results, though the Ziehl was repeatedly negative. Material from each of these last fifteen cases was injected into guineapigs, and seven of the animals subsequently showed no sign of tuberculosis. In spite of great care and repeated filtration there were noted in some of the preparations granules so similar to those described by Much that they were taken by the author to be tuberculous virus, though the negative guineapig inoculations indicated that they were merely particles of the staining agent. For this reason Cramer believes the Much procedure unreliable, and useful only to confirm the clinical and other experimental findings. The mere presence of granulations does not in itself prove the existence of tuberculosis.

Case of Acute Tobacco Poisoning.—G. Fulpins reports the case of a boy, fourteen years of age, in whom an enema consisting of only five grammes of rather mild tobacco, macerated in 500 c. c. of water, brought about immediate epigastric pain, followed by vomiting, collapse, and convulsions. Recovery followed.

ROUSSKY VRATCH.

February 23, 1913.

Some Clinical Misunderstandings in the Employment of Antipyretics. The Action of Sodium Salicylate on the Heart.—P. J. Bovisoff calls attention to the fact that, contrary to the generally accepted opinion, antipyrine and salicylates are not cardiac depressants. His experiments on the isolated heart of a cat showed that quinine is a distinct cardiac depressant, and that antipyrine has a very slight action on the heart, while sodium salicylate is really a heart stimulant. The collapse observed after the administration of large doses of antipyrine and salicylates is caused, not by the action on the heart, but on the vasomotor nerves, diminishing the vascular tonus and thus lowering the blood pressure. The effect is on the temperature, which after the administration of quinine is lowered gradually by the depression of heat production, while with antipyrine and salicylates the temperature drops suddenly, owing to increased heat radiation through the dilated capillaries. It is this lowering of the temperature and the resulting depression of the nervous system that determine the collapse. The practical conclusion reached by the author is that these drugs should be administered in small doses, frequently repeated, so as to avoid a rapid reduction of temperature.

Clinical Observations on the Action of Gonococcic Vaccine in Chronic Gonorrheal Arthritis.—W. P. Semenoff employed polyvalent gonococcic bacterins in six cases of gonorrheal rheumatism with excellent results. He regards this bacterin as a specific and maintains that in case a local reaction is not obtained the arthritis is not gonorrheal. The pain is stopped and the temperature is lowered to normal by the bacterin, and in some cases there is an increase of the urethral discharge. Of the unpleasant effects of the treatment he mentions diarrhea. For a complete cure from eight to twenty injections of 0.2 to 0.8 c. c. each are necessary. They are made at first every four to six days and then every six or seven days.

Hemolytic Properties of the Diphtheria Bacillus.—V. S. Veseloff reports in a preliminary communication his observations on the hemolytic properties of the diphtheria bacillus when grown in bouillon. The hemolytic principle is a constant biological character. It is destroyed by from 50 to 55° C. for ten to fifteen minutes. In addition to the hemolytic principles, he found in the bouillon culture principles which inhibit hemolysis and which seem to have a connection with the toxigenic properties of the diphtheria bacillus.

BRITISH MEDICAL JOURNAL.

April 12, 1913.

Rheumatoid Arthritis.—James Barr scouts the ideas that this condition is due to the action of either bacteria or their toxines, or of the toxines developed in the intestine as a result of stasis. He believes that the proximate cause is a mild, chronic acidosis, which extracts the lime salts from the fibrous tissue, muscles, nerves, cartilages, and bones. The disease is a general one, and the apparent localization is due to the structure of the joints and their liability to injury. The extraction of lime salts from fibrous tissue causes it to swell and its vascularity to increase; loss of lime salts causes irritable weakness of the muscles; they waste, contract readily, cramp occurs frequently, the deep reflexes are exaggerated and rhythmic tremor may arise. Neuralgic pains result from the extraction of some of the very small amount of lime present in nervous tissue. With the continued absorption of the lime the periarticular tissues swell, and there is effusion into the joints, the cartilages soon become involved, and this is followed by thinning and erosion. The facts that the disease is present chiefly among the poorer classes, and in the female sex between the ages of fifteen and thirty-five years, lend support to this view, for in these there is a deficiency of calcium intake and during the active menstrual period there is a tendency to an increased calcium metabolism, often associated with some thyroid disturbance. The relative absence of calcium and potassium in the food of the poorer classes leads to a deficient motility of the stomach, and this, in turn, results in a dilated stomach and obstinate constipation with acid fermentation.

The Various Forms of Fibrositis and Their Treatment.—Arthur P. Luff finds the employment of ionization with iodine ions one of the most useful measures, combined, of course, with the other well known general modes of treatment. He and a number of his colleagues have used fibrolysin in this disease and in others of a similar nature in eighty-three cases. In eighteen of these the drug had to be discontinued, owing to the fact that the injections caused rise of temperature, malaise, nausea, headaches, and in some cases palpitation, vertigo, and tendency to syncope. Of the sixty-five cases in which the patients had the full course of forty injections, no good whatever resulted in forty-six, or seventy-one per cent.; in eleven, or seventeen per cent., there was some improvement; and in the remaining eight cases, or twelve per cent., there was permanent cure. He believes that it is of very limited use.

A Study of the Types of Organism in a Series of Bone and Joint Tuberculosis of Children.—John Fraser made both cultural and biological tests of the nature of the bacilli grown from tissue obtained at operation in seventy cases of bone or joint tuberculosis occurring in children under twelve years of age. In forty-one of the cases the bacillus was of bovine type; in twenty-six, human; and in the remaining three both types were found. Of the children under three years of age, twenty-three were infected by the bovine bacillus, while only five had the human type. Above this age the distribution was almost equal for the two types. Taking food supply and history into consideration, it was found that in twenty-one instances of a family history of tuberculosis fifteen, or seventy-one per cent., of the cases in children were due to the human bacillus. In fifty-two cases there was no family history of tuberculosis, and of these, forty-three children were infected by the bovine type of organism. Only nine, or seventeen per cent., of this latter group had the human bacillus. Of twenty-five of the children brought up solely on human

milk only six were infected with the bovine bacillus, as against nineteen with the human variety. Out of a total of forty-one fed on cow's milk, thirty-seven infections were of the bovine type and only four of the human.

LANCET.

April 12, 1913.

The Effect of General Contraction of the Peripheral Bloodvessels upon Mouse Cancers.—Charles Walker and Harold Whittingham call attention to the fact that the injection of various compounds of metals intravenously into mice causes, in every case, a marked general vasoconstriction. Further, it is known that the vessels in the mouse cancers, particularly in those which are grafted, contain no vasomotor nerves and are very thin walled. From these facts the authors thought that the action of these preparations might be due to some extent to mechanical factors, and not to any selective action of the metals. Trying a preparation of ergot (ernutin) and one of pituitary in two series of mice, and at the same time running controls, the authors saw a number of tumors retrogress, and the pathological lesions found in each instance were quite similar to those seen after the use of one of the toxic metallic preparations—that is, chiefly local hemorrhages in the tumor substance, with necrosis. They believe that these experiments confirm their hypothesis with regard to the probable mechanical action of the substances used by Wassermann and Neuberg. It is also suggested that the increased circulation through the tumors, as a result of the passive dilatation of the vessels, is, in part at least, the cause of the apparent selective action of the toxic substance used; for this is brought to the tumor in greater amount relatively than to the rest of the body tissues, and is there fixed.

A Series of 236 Cases of Total Enucleation of the Prostate Performed during the Two Years 1911-12.—P. J. Freyer gives brief records of the results of a few of these, including one patient who regained control of his bladder after twenty-four years of exclusive catheter life. In the 236 operations there were only eleven deaths, or 4.66 per cent. Adding the present series to his previous operations, Freyer reports on a total of 1,036 total enucleations of the prostate, in men ranging in age from forty-nine to ninety years. The glands removed weighed from one half ounce to seventeen ounces, the average being about two and three quarter ounces. Most of the patients were in bad health at the time of the operation and some were actually moribund; yet the mortality for the entire series was only 5.5 per cent. The remaining patients, 979 in all, got completely well with a single exception, in which the patient failed to regain the power of voluntary micturition.

JOURNAL OF TROPICAL MEDICINE AND HYGIENE.

March 1, 1913.

Intestinal Parasites in Costa Rica.—S. C. Jamison presents a report based on the examination of 210 patients at Port Limon. Of the 169 cases, or nearly eighty per cent., that were positive for some intestinal parasite, the majority were in negroes, the remainder comprising mainly native Costa Ricans, with a few foreign whites. Trichuris was found to constitute by far the most extensive infection, and the author is certain that this infection gives rise to symptoms by causing anemia of a marked, though very seldom severe, grade. Hemoglobin estimations were made in the majority of cases. The lassitude, headache, and vague intestinal symptoms often complained of are to be attributed to trichuris infection. Of the few English and Americans examined, those harboring this parasite had all been in the country for a period exceeding one year. Necator and ascaris were found not to occur as frequently as in many parts of the United States. Mixed infection, however, appeared to be more common (fifty-nine cases). Necator and trichuris were present together thirty-two times; ascaris and trichuris four times; necator and oxyuris twice; necator, ascaris, and trichuris nine times. The presence of one parasite seemed in no way to affect the others.

March 15, 1913.

Apparent Cures in Sleeping Sickness.—Mercier Gamble treated forty-one unselected cases of trypanosomiasis in the Portuguese Congo with not less than one hundred grains of atoxyl, administered subcutaneously in the forearms, usually in four grain doses. Nineteen of the patients are now alive and well, from three and a half to four years after the course of treatment. The method referred to requiring much time, however, the author has since October, 1910, given, as a rule, seven and one half grains of atoxyl twice weekly by intramuscular injection. Of a group of thirty-two patients who commenced treatment in that year, twenty-one are in good health.

Contribution to the Study of Bilharziasis.—Ivo Bandi's observations supported the opinion of Looss that schistosomum ova with terminal spines and those with lateral spines belong to the same species, which may become localized in either the bladder or the intestine or both.

BOSTON MEDICAL AND SURGICAL JOURNAL.

April 17, 1913.

Hand Lesions Following Injuries of the Upper Extremities.—C. Hermann Bucholz considers the questions how to prevent and how to cure the disablement of the hand which is apt to follow a Colles's fracture. He names as causes: 1. The primary injury; 2. the hemorrhage; 3, the forcible reduction of the fragments; 4, the faulty application of splints and dressings; 5, too long duration of treatment; 6, an ill judged aftertreatment. As to the primary injury, little is said except that the danger of a secondary affection of the hand does not seem to be proportional to the injury to the bones. The hemorrhage he thinks important, as its absorption is slow, inhibited to a certain extent by preventing muscular action, and may set up an inflammation that results in a formation of fibrous tissue with secondary retraction and atrophy of muscles, tendon sheaths, ligaments, and capsules. Functional cure does not depend upon the exact reduction alone. Harm may be done in the reduction, and this danger is increased when forcible reduction is made several days or weeks after the injury. All splinting does some harm, and this

should be made as little as possible. By splints the speed of the absorption of the hemorrhage is diminished, the circulation is decreased, the nutrition is interfered with to some extent, and the muscles and joints are deprived of the beneficial effect of functional stimulation. Hence, their unnecessarily long use is apt to increase the stiffness of the joints and the retraction of the muscles, rendering after-treatment longer and the final result poorer. The technic of the treatment Bucholz employs is as follows: After the reduction of the fragments the arm and hand are put on a Schede's splint in palmar and ulnar fixation. On the following day the dressing is removed, but the hand is not lifted from the splint, which lies, with the hand on it, on a table, or on the operator's knee. While one hand of the operator holds the patient's wrist tightly, but without hurting it, the other hand gives a number of soft, stroking manipulations over the muscles of the forearm as far as can be reached over the back of the hand. Then the dressing is reapplied. On the next day the same treatment is given, adding a few passive movements of the fingers. When the splint is correctly applied the fingers are allowed free play. The stroking is given more vigorously and kneading manipulations are added. A few movements of the wrist are made as early as the fourth day. If done with sufficient care this does not cause pain, and loosening of the fragments is hardly possible when the wrist is held firmly on the splint. Such treatment is to be given for a few minutes every day, or at least every second day; increasing each time the amount and number of the motions. When the hand is already impaired, a good functional result can be obtained in the milder cases by a persistent use of baking, proper massage, and active and passive exercises; in the severe cases the hand will remain more or less crippled.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

April 19, 1913.

Systematic Exercises in Postoperative Treatment.—Eugene H. Pool sets forth clearly the value of systematic exercises in postoperative cases, their trial, by the writer, in a number of cases seeming to support the theory that their use results in an improvement in the general circulation, the functions of the body being better performed. The patients feel better, muscular weakness and atrophy are lessened, and after getting up exertion is less fatiguing and return to normal more rapid. The two objections, possible interference with the repair of the wound and danger of embolism and thrombosis, may be disregarded provided proper exercises are selected and intelligent instruction is given the patient; there is reason to believe that the exercises may prove a prophylactic against these complications. It is important that the postoperative exercises should be systemized, and, while general exercises may be prescribed for certain conditions, personal supervision is essential in every case.

The Bacteriology and Bacteriotherapy of Renal Calculus and Its Sequels.—A. P. Ohlmacher emphasizes the importance of routine bacteriological analysis of all cases of renal calculus and the associated pyuria and bacterinuria. It is suggested that therapeutic immunization with autogenous bacterial vaccines should be tried in all nonoperative cases of calculous, pyuria, and bacterinuria for the relief of bladder irritability and impaired general health, and in cases in which operation has been done when these symptoms are unduly prolonged.

Tubal Reimplantation; a New Conservative Operation for Sterilization of Women.—George De Tarnowsky describes the technic of this operation and lays special emphasis on two points, the invagination of the tubal stump in order to obtain seroserous coaptation, and the eversion of the cut tube as it emerges from the tunnel on the posterior uterine wall, obliterating raw surfaces which might aid in the formation of adhesions. Reconstruction of the tubes, if occasion demands and the patient wishes to become pregnant again, would consist in resecting the invaginated portion of the uterine stumps, removing the tubes from their artificial canal, and reuniting the ends, mucosa to mucosa, with very fine interrupted catgut sutures.

MEDICAL RECORD.

April 19, 1913.

Primary Splenomegaly of the Gaucher Type; Report of a Successful Splenectomy.—William A. Downes reports a case of primary splenomegaly of the Gaucher type in order to call attention, in brief, to the clinical manifestations of this rare but extremely interesting condition, and to record the second successfully operated case in this country, which, with Erdmann's case, the first successfully operated case in America, brings the total number of operated cases up to seven, there having been, of this number, five recoveries and two deaths. The most prominent feature of the histological picture in the writer's case was an extensive, uniform, diffuse endothelial hyperplasia, the endothelial cells resembling those seen in the so called "large celled hyperplasia" of lymph sinus endothelium, and forming a solid mass or sheet lying sometimes within the sinuses but mostly between them. The cells were large and nearly spherical, having a relatively large amount of faintly acid staining, homogeneous cytoplasm, and relatively small oval, vesicular, or smooth staining nuclei. The cell borders are faint and in the more solid masses indistinguishable. Where the cells are within the sinuses they often lie loose, with the blood cells between them. Although the sinuses are compressed by these cell masses, they are still patent, and contain red blood cells—occasionally nucleated, numerous cells resembling large lymphocytes, and relatively numerous polymorphonuclear leucocytes, mostly neutrophile. Although the sinus epithelium is hypertrophic, it is not actively proliferating. The pulp cords are almost obliterated, being represented by narrow bands of lymphocytes which separate the groups of endothelial cells. The lymph follicles are normal, though few and small, and from their distribution and size apparently represent the darker points seen in the gross examination. The trabeculæ are not apparently thickened.

A Method of Classification, Diagnosis, and Therapy of Kidney Disorders, Based on Func-

tional Testing.—Herbert E. Baright reviews the theories and classification of kidney disorders from the time of Richard Bright, who first, in 1836, pointed out the connection between anatomical changes in the kidneys and the presence of albuminuria and dropsy (the same views being held by Henle, Virchow, Ludwig, Traube, Cohnheim, and Klebs); touching on the theories of Weigert, Ludwig, Bowman, and Heidenhain, and finally showing that no theory previously advanced would explain all the facts. The modern view of the normal functionating of the kidney, according to the writer, consists of at least three processes, simple filtration (chiefly in the glomerulus and dependent upon blood pressure and the chemical composition of the blood), osmosis, and synthesis or secretion (chiefly in the tubules). In addition to the two groups, dropsical and nondropsical nephritis, Widal proposed a third, which he called the "azotemic" or uremic type. By experimental pathology it was found that different drugs, administered to healthy animals, cause injury to different parts of the kidney structure. The same substances were next administered to nephritic animals, and the elimination time noted. These experiments were then repeated with the human subject, both healthy and nephritic, and it was found that lactose elimination is delayed in those conditions corresponding with experimental nephritis of the cantharides type, but not in other types. Similarly, potassium iodide and sodium chloride are delayed in clinical conditions resembling the experimental nephritis of the sublimate types, but in no other. Urea is delayed only in those conditions where there is a tendency to uremia; so there is added another, called the mixed type. By this classification albumin and casts lose their value as diagnostic signs, as they may be present in every type of renal disorder. In their place a series of signs is presented, possessing true diagnostic meaning and value. Circulatory troubles are peculiar to and diagnostic of vascular nephritis; anasarca and diminished capacity for salt excretion are peculiar to the tubular type; repugnance for meat, albuminuric retinitis, and increase of nonprotein nitrogen in the blood are peculiar to the uremic type. In addition, functional tests may be used.

A New Treatment for Acute Gonorrhea.—O. L. Mulot reports good results from the use of a five per cent. solution of iodine in oil as a urethral injection, three times daily, until the discharge ceases. If the discharge reappears, the iodine is used once daily and is supplemented with a sulphocarbolate of zinc injection, twice a day. The writer believes this treatment applicable also to streptococcus and staphylococcus infections of the urethra. The best results from this treatment will be obtained if the physician will administer the iodine injections personally. In chronic cases the posterior urethra is involved, including the seminal ducts, the prostate, seminal vesicles, etc., about the end of the third week. Here, after an intelligent massage of the parts, and these washed out by micturition, an injection of iodine will do good, but will not yield such prompt results as are obtained in the acute cases.

AMERICAN MEDICINE.

March, 1913.

Treatment of Fibroid Tumors, with Report of Seven Hundred Cases.—Ellice McDonald, after a careful study and consideration of 700 cases of fibroid tumor, concludes that fibroids do not retrograde on the establishment of the menopause, but, on the contrary, increasing age augments the danger from these growths. Before the fortieth year the danger of malignancy is slight; after this each year increases the danger. Early removal of fibroids is indicated when of sufficient size to produce symptoms and patients seek advice, by reason of the sarcomatous changes, carcinomatous associations, and other degenerations of uterine fibromyomata. Small uncomplicated fibroids in young women do not require early treatment. A thorough pathological examinations of all fibroids should be made for evidences of malignancy. Adenoma and sarcoma should be looked for in all fibromata, at the time of operation. To those tumors which are necrotic, cystic, or both, particular study should be given, as among those are found the largest proportion of malignant changes. As in a large percentage of cases there are inflammatory changes in the Fallopian tubes and appendix, these should be examined at the time of operation and removed, if diseased.

Diagnosis of Early Pregnancy.—Ellice McDonald insists that the diagnosis of early pregnancy must depend on no one sign, but upon the conjoined evidence of all signs. After the third month the congestive signs of flush of the vagina offer reliable evidence, but before the ninth week they are of no great use. The diagnosis of early pregnancy must form the changes in the uterus occasioned by the growing ovum—irregular enlargement, symmetrical or otherwise, intermittent contractions, Hegar's sign (compressibility of the isthmus), and the writer's sign (flexibility of the isthmus or hinge sign of pregnancy). From these last two signs of compressibility and flexibility of the isthmus, with enlargement and irregular contraction, a positive diagnosis may be made within ten days after the missed menstruation and will increase the ease of positive diagnosis later on.

Puerperal Infection from the Gonococcus.—Ellice McDonald insists that the treatment of the form of puerperal infection must be largely in the line of prophylaxis. The specific vaginitis is always present before the advent of labor, and proper measures should be used against it. This is best done by douches before labor. The douche was formerly looked upon as worthless since the organisms increased markedly after its use. This happened when bichloride of mercury and formalin were used, but it has since been proved that dissolved in water these antiseptics are useless in the presence of organic tissue (skin, mucous membrane, blood serum, pus, etc.), being therefore only irritants, not antiseptics. With the new efficient coal tar derivative germicides this is not true. The writer suggests chlormatakresol, a powerful germicide only slightly affected by the presence of albuminous fluids, harmless to the vaginal mucosa, and nontoxic. Local treatment causes irritation

and may provoke premature labor. The labor is conducted with as little traumatism and as few examinations as possible. The douches are continued and longer rest in bed is enjoined. If abscesses develop they must be opened as soon as discovered and treated locally.

Comparative Value of the Different Physical Signs in Incipient Pulmonary Tuberculosis.—Robert Abrahams asserts that the increased whispered sound is of the greatest value in the diagnosis of incipient tuberculosis, as it is the one reliable, suggestive, and decisive sign of beginning tuberculosis in the lower lobes. Râles, moist, dry, or musical are suggestive of early tuberculosis in an apex, but of little or no value around the borders of the lower lobes; especially is this true of moist râles which are normal to most persons in that position and the presence of which is probably due to the neglect of deep breathing. If râles are difficult to make out over the apices, the stethoscope placed over the acromion processes will bring them out with distinctness and definition, if present. Diminished breathing is an important sign, but is not met with as frequently as the textbooks would have us believe. Exaggerated or harsh breathing is not a sign of early tuberculosis of the lung over which it is heard, but is compensatory in character, and the tuberculosis should be sought at the corresponding point in the opposite lung.

Cure of Leprosy an Established Fact.—E. S. Goodhue boldly asserts that in the large number of incipient cases where the disease is localized (peripheral or neural), any treatment that will remove the circumscribed area or focus of infection, without opening up channels for metastatic dissemination, will effect a cure in from six to twelve months' time. The initial focus may remain localized for a time, extending from a few months to years, or even a lifetime.

Pregnancy with Hydramnion.—S. J. Druskin concludes that an absence of positive signs of pregnancy should not exclude the diagnosis of pregnancy, as in hydramnion the fetal heart sounds are often absent and the fetus can be palpated only with difficulty. The x ray picture is here valueless and may be misleading, because it has been shown experimentally that amniotic fluid is opaque to the x ray. The acetone test is of positive value in doubtful cases of pregnancy. Pituitary extract (one c. c., hypodermically), when combined with a Voorhees bag, is useful for the induction of premature labor. Atony and hemorrhage are prevented by the use of pituitrin.

JOURNAL OF INFECTIOUS DISEASES.

March, 1913.

Fusiform Bacilli Associated with Various Pathological Processes.—Dick calls attention to the fact that the fusiform bacilli found in connection with ulceromembranous anginas, ulcerative stomatitis, and noma may also be found in other parts of the body. He reports three cases of meningitis in which the fusiform bacilli were found, three cases of lung infection, and one case of peritonitis following an endometritis. The importance of these bacilli in causing the pathological processes must remain an open question. The negative results of all attempts to demonstrate pathogenic powers for animals suggest that the organism may have been present only as a secondary invader, as other organisms were found in all cases.

Studies on the Virus of Hog Cholera.—King, Baeslack, and Hoffman report that the examination of the blood of forty hogs which were suffering from cholera revealed the presence of a spirochete. All specimens of blood from these animals, during the height of the disease, contained characteristic granules, although without cultures with which to innoculate susceptible animals, it is impossible at this time definitely to ascribe to the spirochete under observation any pathogenic properties or etiological significance. Nevertheless, careful consideration should be given to the results, which are consistent and uniform throughout, and which, in some particulars, strongly suggest the relationship of this spirochete to hog cholera as a causative factor.

Tuberculosis of the Stomach with Extensive Tuberculous Lymphangitis.—Dewey reports a case and gives a review of the literature on the subject, particularly in relation to the lymphatic supply of the stomach. Although in the author's case a direct infection of the gastric mucosa cannot be excluded absolutely, the ensemble of the conditions in this case, the fact of the general tendency of tuberculous processes to spread along lymph channels, and conclusions drawn from the literature lead one to assume the lymphogenous nature of the infection, not only in this case, but in the larger number of cases of tuberculosis of the stomach.

JOURNAL OF PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS.

March, 1913.

Epinephrine.—H. McGuigan and H. T. Mostrom state as a result of their experimental work that there is nothing to indicate that the rapid fall of pressure which may follow clamping of the adrenal veins is due to a decreased epinephrine content of the blood, though by a suitable method—that of Popielski—a continuous secretion on the part of the adrenal glands can be demonstrated. The authors present evidence to show that the glands exert more than one function and that the substances essential for the maintenance of these functions are oxidized with different velocities.

Peripheral Action of Certain Drugs with Especial Reference to the Lungs.—D. E. Jackson was able to show conclusively that epinephrin produces a prompt dilatation of the bronchioles where these are contracted; this effect is wholly independent of the rise of blood pressure produced by epinephrine. Moderate quantities of atropine do not paralyze the bronchodilator nerve endings. Injection of a small dose of pilocarpine into the spine of a dog with vagosympathetic nerves cut, produces a slight bronchoconstriction which is soon followed by a moderate but usually prolonged dilatation; this latter change does not occur if the adrenals have been previously excised or clamped off, and may therefore be ascribed to stimulation of these glands by an increased secretion of epinephrine. Several alkaloids, including quinine, cause bronchoconstriction, apparently by a direct muscular action. Nicotine causes, after brief initial con-

striction, a dilatation which appears to be due to an increased secretion of epinephrin caused by the nicotine.

Resistance of Spirochetes in Cultures to Chemical and Physical Agents.—J. Bronfenbrenner and H. Noguchi tested the action of various antiseptics, as well as salvarsan and neosalvarsan, on living spirochetes, contrasting the effects of the agents used with those produced on *Bacterium coli*. The minimal concentration of chemicals required to kill *Treponema pallidum* of a heavy type was, of mercury bichloride, one to 200,000; arsenic trioxide, one to 30,000; tricresol, one to 500; phenol, one to 200; sodium hydroxide, 1/30 normal; hydrochloric acid, 1/300 normal; salvarsan, one to 1,000; neosalvarsan, about the same as salvarsan. Alcohol in ten per cent. strength did not sterilize the spirochetes. Minute quantities of the antiseptics, far below the sterilizing point, were found to stimulate markedly the growth of spirochetes. In general, the toxic effect of the chemicals was twenty to 100 times greater against the spirochetes than against the colon bacillus. The toxic effects of salvarsan were found to be increased from two to five times in the presence of liver and especially blood enzymes. Spirochetes suspended in physiological salt solution are sterilized at 45° C. in from seven to ten minutes.

LONG ISLAND MEDICAL JOURNAL.

April, 1913.

Ligaments of the Patella.—James P. Warbasse says that it is neither true that the patella is wholly a sesamoid bone nor that the tendon of the quadriceps is wholly inserted into the bone. A portion of the tendon is inserted into the upper part of the patella, but the most important part of the tendinous terminations of the muscles pass in front and to the sides of the patella, to be attached below the knee joint. Beneath the fascia lata there is a layer of tendon which passes in front of the patella, below which is a deeper prepatellar tendon which is directly continuous with the terminal tendon of the rectus femoris, and into which there are inserted also fibres from the vasti. The fascia lata also serves to some extent as part of the insertion of these three muscles. The portion of the quadriceps tendon lying in front of the patella carries fibres directly from the rectus and vasti. It is inseparably united with the periosteum. Below, the ligamentum patellæ rises from it. Laterally it is closely adherent to the fascia lata. This double ligament connects the sides of the patella with the head of the tibia and the fibula and with the tubercle of the tibia. It transmits the pull of the three great extensors around and independent of the intervention of the patella. In repairing after fracture of the patella the suture of these ligaments is the main feature of the operation.

MONTHLY CYCLOPEDIA AND MEDICAL BULLETIN.

March, 1913.

Medical Treatment of Gastric and Duodenal Ulcer.—L. M. Gompertz, upon reaching a diagnosis of ulcer, insists on absolute rest in bed and, in the acute cases, allows no food by mouth for five to seven days, sometimes longer. Morphine is given hypodermically until hemorrhage has positively ceased, an ice pack placed on the abdomen, and, if necessary, the bowels moved by an enema. In the absence of hemorrhage, hot applications may be made, a saline purgative administered, and later thirty grain doses of bismuth subnitrate given, in conjunction with seven and one half grain doses of magnesium hydrogen dioxide (twenty-five per cent.), three times daily. Small quantities of boiled water may be required to insure retention of these drugs. For nutritive purposes the author institutes immediate rectal feeding with a solution of dextrose, which, he has observed, is absorbed almost *in toto*. One half litre of a ten per cent. solution of dextrose in normal saline solution is introduced into the rectum at body temperature every six hours, by means of a rectal feeding apparatus which permits of applying the Murphy drop principle. The apparatus consists of an inverted vacuum bottle, fitted with outlets, a soft rubber dispensing tube, and, connected with a gauze glass, a drop chamber, together with devices for controlling the flow of solution. The latter is placed in the receptacle at boiling temperature and delivered at body temperature. By this plan the patient can be supplied with over 700 calories daily. As soon as the condition permits, oral feeding should be resumed, beginning with albumin water. Then well cooked and strained oatmeal gruel or thick barley soup is given, and finally other thick soups and boiled, scraped meats.

NEW ORLEANS MEDICAL AND SURGICAL JOURNAL.

March, 1913.

Abdominal Cæsarean Section in Eclampsia and Central Placenta prævia.—Espy M. Williams calls attention to the fact that tentative treatment is falling into disrepute, and that the majority of pracitioners evacuate the uterus as soon as the first convulsion occurs and, if possible, even in the preeclamptic stage. It is with this idea of promptly emptying the uterus that the writer reports two cases as examples of the quickest, easiest, and safest method. The writer uses the high incision, and partially delivers the uterus from the abdomen sufficiently to give access to the base of the broad ligaments that rubber covered stomach clamps may be slipped over each one, not closed, but in readiness for closure should hemorrhage necessitate it. In closing the uterine wound he uses four layers of sutures; the first (doubled No. 2 plain gut) takes up the muscles down to, but not through, the mucous membrane; no knot is tied in the end of this, but it is brought directly back, taking up the muscle alone, in the second layer; the third layer is of linen and takes up muscle and peritoneum; and the fourth, of linen, is of a Lembert type, and brings the peritoneal coats into apposition. The mucous lining must not be included in the first layer of sutures, as union is impossible between cut muscle and an inverted mucosa, and, moreover, a ruptured scar in subsequent pregnancies is avoided. To diminish the chances of infection, the cervix is not dilated from above to provide for drainage, nor is any drain inserted. If ergot is given just before opening the abdomen it will facilitate the post partum uterine contraction. In central placenta prævia the writer advises delivery by Cæsarean section, because it is more rapidly done and the shock and dose of an anesthetic are less, the opportunities for asepsis greater, and hemorrhage is better con-

trolled, since the uterus may be removed if reasonable attempts at hemostasis have failed. In any case, the uterus should be emptied as soon as the condition is recognized, no matter what stage of pregnancy is present, unless the patient is willing to take the risk of delay for the sake of the child, in which event the pregnancy may be allowed to go on as far as the eighth month, when Cæsarean section should be done.

Residual Urine in Old Men.—S. P. Delaup considers age, feebleness, and an enlarged prostate as common, if not invariable, accompaniments of this condition, but the true cause, in his opinion, is a deficiency of effort on the part of the patient, which may be due to laziness, impatience, or indifference. As to treatment, the writer advises those having residual urine to pass the urine in the usual way, wait a minute or two and then try again, practising this as frequently as possible, till only a small quantity can be squeezed out—say, half an ounce. Reaching this point, twice or thrice daily may suffice, the two most important times being before going to bed and on rising in the morning, when it may be advisable at first to make three, or even more, efforts, so as thoroughly to empty the bladder. This treatment is applicable to and likely to be successful only in early cases, those in which residual urine is not more than a few ounces and there is no atony of the bladder. The treatment should be begun early.

PENNSYLVANIA MEDICAL JOURNAL.

March, 1913.

Pituitary Body in Disease; Method and Results of Surgical Intervention.—Charles H. Frazier describes a method of approach to the pituitary which consists in the reflection of a flap from the frontal bone. The incisions are made through the eyebrow, below and within the hair line above, and are connected by a vertical median incision. The supraorbital ridge and part of the orbital roof are removed *en bloc*, later to be replaced. The remainder of the orbital roof is rongeured away down to the optic foramen. The frontal lobe of the brain is elevated, the contents of the orbit are depressed and the region of the pituitary is thus exposed to view and is easy of access. The operation is not bloody and the cosmetic result is very satisfactory.

Treatment of Flat Foot.—De Forest P. Willard says that the arches of the foot are maintained, in great part, by the slinglike action of the peroneal and tibial muscles. Any weakness of the tibials on the inner side, or overaction of the peroneals, will cause the foot to evert when the body weight is placed upon it. This throws the line of weight bearing inward and increases the strain upon the supporting muscles. As the tibials stretch, the strain is thrown on the plantar fascia and the ligaments of the tarsal joints, which gradually give way and the normal arch disappears. During the earlier stages when there is muscular strain with little or no displacement much can be done. The essence of the treatment is: 1. To strengthen the weakened muscles. This can be done by regular exercises which the patient can carry out at home, but which must be done faithfully if success is to be obtained. 2. To allow the foot to assume its normal position. This is to be accomplished by the elimination of faulty footwear. 3. To relieve the strain on the muscles by throwing the line of weight on the outside of the foot and to support the arch until the muscles are ready to take up their full work. This is accomplished by the adjustment of a proper shoe. Such a shoe should be straight on the inner side, have a rounded toe, a low, broad heel, extended forward on the inner side, a broad stiff shank, and the counter should be extended to the anterior portion of the arch. In some cases it may be necessary to add a wedge of leather, from one to five eighths of an inch thick, at the inner border, which tapers gradually as it approaches the outer side of the shoe. In the advanced cases it may be advisable to place pads under the instep, supporting partially the tarsal arch. Willard unreservedly condemns the common detached arch support which can be purchased everywhere, and says that it not only does no good, but greatly increases the suffering of the patient, while injuring the foot materially.

Proceedings of Societies.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, Held at the New York Academy of Medicine, February 4, 1913.

The President, Dr. SMITH ELY JELLIFFE, in the Chair.

Tumor of the Base of the Brain Immediately behind the Pituitary Body.—Dr. H. CLIMENKO reported the case of a girl, nine and a half years old, who first came under observation November 10, 1912. For the past twelve months she had suffered from unusual thirst and occasional vomiting, and about six weeks ago ptosis of the right eyelid was noticed. Two days later a similar condition developed on the left side, and she began to suffer from intense headaches and profuse vomiting. Examination by Dr. Climenko showed that all the tendon reflexes were increased, but there were no Babinski sign, no clonus, and no sensory disturbances. There was complete bitemporal hemianopsia, with pallor of the optic discs. There was complete ophthalmoplegia of the left eye, and the right eyeball was drawn outward. Both pupils were widely dilated and failed to react to light and accommodation. With these symptoms, the following possibilities as to diagnosis were thought of: 1. A toxic neuritis of the ocular and optic nerves. 2. An empyema of the body of the sphenoid. 3. An encephalitis of specific origin. 4. Tumor. The patient was admitted to the Mount Sinai Hospital, where she was seen by Dr. I. Abrahamson. The blood and spinal fluid were examined with negative results as to the Wassermann test. An x ray examination showed a marked depression of the middle fossa of the skull, presenting a troughlike appearance, while the posterior clinoid process was pushed forward, narrowing the upper part of the sella turcica. With these findings, the diagnosis of a tumor of the base of the brain was established. This patient, Dr. Clemenko said, was at present in the Neurological Hospital on Blackwell's Island. For the past few weeks the headaches and vomiting had disappeared completely, but the child was extremely emaciated and totally blind.

Dr. I. ABRAHAMSON said the case was first looked upon as one of toxic ophthalmoplegia, with beginning atrophy of the discs. A little later, when the atropine had worn off, it was noted that the pupils remained widely dilated, did not contract to light, etc., and they then knew that they were dealing with a condition directly involving the nerves themselves. The x ray cleared up the diagnosis, revealing a tumor behind the sella turcica.

A Case for Diagnosis.—Dr. CLIMENKO presented a woman, forty-six years old, who was first seen six years ago, when she gave the history of recurring attacks of loss of power in the right arm, increasing in frequency and duration during the previous two years. Physical

examination revealed a hypertrophy of all the muscles of the right upper extremity. The reflexes were unchanged; there were no sensory disturbances; no change in the electrical reactions. There was diminution of the gross motor power in the arm, and inability to execute the finer movements (picking up a pin; threading a needle, etc.), with the right hand. No other symptoms were present. Six years later, when the patient again consulted Dr. Climenko, an examination showed enormous hypertrophy of all the muscles of the right upper extremity, but particularly of the flexors of the forearm. The electrical tests showed a normal nerve reaction, but a remarkable increased excitability to both galvanic and faradic currents, without any qualitative change. There were myotonic contractions of the biceps at each attempt to flex the forearm, either actively or passively. Direct myotonic irritability was increased, and fibrillary twitchings were present in the flexors of the forearm. There was marked weakness of the entire right upper extremity, and inability to use the hand.

Dr. Abrahamson said this case seemed to him to be unique. It was apparently an unusual type of syringomyelia, with the involvement of two distinct cord areas, producing both a myotonia and a macrosomia. There was also a slight enlargement of the right face, the right side of the forehead being more prominent than the left. F. Hochwart many years ago had called attention to a syringomelia with intentional spasms; but here distinct myotonia was absent.

Air in the Ventricles of the Brain Following a Fracture of the Skull.—Dr. W. H. Luckett reported this case. The patient was a machinist, forty-seven years old, who was admitted to the Harlem Hospital November 24, 1912, after being struck by a trolley car. The diagnosis of fracture of the skull was made and was confirmed by two x ray plates by Dr. W. H. Stewart, and the patient was prepared for immediate operation; but the symptoms cleared up so rapidly that it was decided to wait. In less than a fortnight the patient insisted on leaving the hospital and one week later was readmitted with the history that two days previously he had had a severe headache, with occasional vomiting. Up to that time he had been reading the papers daily, although he was dull and listless and would not converse with anyone and took no notice of his surroundings. For the past few days he had not replied when spoken to, although he understood what was said to him. Two days after his readmission to the hospital the patient was examined by Dr. William M. Leszynsky. At this time the man was conscious; he answered questions and obeyed commands intelligently; but cerebration was slow, and he was inclined to lapse from time to time into a condition of mental confusion. There was no aphasia; no disturbance of speech; no astereognosis; no tremor of tongue or hands. The pupils were normal and reacted equally; facial innervation and mobility of the tongue normal; no tenderness on percussion over skull; no rigidity of neck; upper extremities normal. The lower extremities showed no paresis or rigidity, but were resistive to examination. Both knee jerks, and especially the right, were increased. Diagnosis, increased intracranial pressure; probably abscess. A blood count, made on December 15, showed 15,900 leucocytes, with eighty-six per cent. of polymorphonuclears and eight per cent. of lymphocytes. On the same day an ophthalmascopic examination, made by Dr. M. Cohen, showed that the external ocular muscles of both eyes were normal, while there was a slight subconjunctival hemorrhage in the right temporal quadrant. In the right fundus the veins were enlarged and tortuous, with the central vein markedly dilated over the disc and also at the exit from the nerve. The arteries were slightly contracted, and the disc borders were indistinct, from marked edema. In the left fundus also the veins were greatly dilated, the arteries contracted, and the disc borders indistinct, while there was a suspicion of retinal hemorrhage. Diagnosis, bilateral optic neuritis indicative of intracranial pressure. A second series of x ray pictures, taken by Dr. Stewart, showed that the cerebral ventricles were enormously dilated, probably with either air or gas, and, the patient apparently getting worse, a right sided subtemporal decompression was done by Dr. Luckett on December 16. Upon exposure, the dura did not bulge and was not particularly tense. No fluid escaped on incision of the dura and pia; a slight meningitis was noted. A needle was then passed into the anterior horn of the lateral ventricle, and the removal of the trocar was followed by two or three quick spits of air and fluid, and then clear cerebrospinal fluid to the amount of eight c. c. Because of the presence of meningitis and the large quantity of fluid and the presence of air in the ventricles, it was determined to drain the latter; and a suboccipital operation then performed. The bone was exceedingly thin. The dura was incised, and then the pia into the cisterna magna, and immediately there escaped considerable clear fluid, generously admixed with bubbles of air. A small piece of twisted rubber tissue was inserted as a drain. The patient did well until the fourth day after the operation, when his temperature suddenly went up to 107° F. and he died. At the autopsy air was shown to be present in the ventricles when they were incised with the brain submerged in a vessel of water. There was a lacerated wound of the base of the right frontal lobe just beneath the right anterior horn and just over the fracture in the orbital plate which communicated with the frontal sinus. It was subsequently learned that air was probably forced up through the fracture in the frontal sinus into the ventricles during an attack of sneezing. In connection with the case, Dr. Luckett exhibited a number of radiographs demonstrating the presence of the air in the ventricles of the brain.

Dr. William M. Leszynsky said that the x ray plates in this case showed a very unique picture; unlike anything, so far as he knew, that had ever been recorded.

Some Anomalous Tremors.—The President, Dr. Smith Ely Jelliffe, showed two patients to illustrate some anomalous types of tremors. The first was a woman, twenty-nine years old, with a tremor of the left hand which was continuous during the day, disappearing during sleep. The tremor had come on gradually about seven months previously. Its rate was from five to six to the second, and had little intention quality. There was also a slight inequality in the pupils, but no modification of the reflexes. The eye grounds were normal. The second patient, a woman, thirty-four years old, had a tremor which began fourteen years previously in a manner very similar to that illustrated in the first case. It began in one hand and gradually became generalized, until now it involved almost the entire body. There was marked stiffness and a tendency to retropulsion at times. There were no palsies or sensory changes, except that the sole of the left foot showed a slight diminution to light touch. All the reflexes were fairly active; there was no distinct Babinski sign. The eyes showed a slight inequality of the pupils, as in the first case, and a very distinct pallor of the temporal side of both discs. The fields were normal; there was no nystagmus. There were no speech defects. The patient had gradually lost weight, but there was no appreciable diminution in muscular power.

Dr. B. Sachs said he regarded the first case as one of paralysis agitans and the second a multiple sclerosis. The first case he thought was absolutely typical of paralysis agitans; there was no other type of tremor that it could be mistaken for, and the only one that could be at all compared to it was an occasional function tremor. He recalled one such instance where the husband had paralysis agitans and a very similar functional tremor developed in the wife. In the case shown by Dr. Jelliffe the woman had the facies of paralysis agitans, and had no symptoms which would lead one to think of any other diagnosis. As to her age, that would not necessarily militate against the diagnosis, as paralysis agitans might have its onset in early life. The speaker said that in his book he had recorded a case of paralysis agitans in a young man coming on about the age of eighteen or twenty; in that case all the symptoms of a disseminated sclerosis developed eventually, although at their onset they were quite characteristic of paralysis agitans. As to the second case, he thought there was no doubt that it was an example of multiple sclerosis. The woman had a tremor which became worse on exertion, and she had just a slight tremor —an unconscious tremor we might call it—of the head and neck muscles, which we did not see in paralysis agitans. This was very significant of multiple sclerosis. She also had pallor of the optic discs and some monotony of speech.

Dr. Abrahamson said that in cases like that of the second patient we probably had to deal with a diffuse lesion in the mid brain, in the nucleus ruber, and the crus, and very likely with involvement of the rubrospinal system.

Dr. J. RAMSAY HUNT said that on passive motion in Dr. Jelliffe's first case, there could be elicited a slight interrupted rigidity of the muscles. This was a phenomenon to which Dr. Moyer had applied the name of the "cog-wheel" symptom of paralysis agitans, and in early cases the speaker thought it was of distinct value. As to the second case, he thought a positive diagnosis could not be made. That offered by Dr. Sachs would be a probable working one; at the same time he himself was inclined to regard it as a case of progressive degeneration, perhaps, as Dr. Abrahamson had suggested, in the pyramidal tracts.

Dr. LESZYNSKY said the unusual factor in the first case was the age of the patient. The character of the tremor was not at all unusual, as he could recall perhaps half a dozen cases where it was unilateral, being confined to one hand for many months. When the patient's attention was directed to the opposite hand, the tremor on the affected side increased, which was quite characteristic in paralysis agitans. In the second case he did not think much stress could be laid upon the pallor of the discs, as ophthalmologists frequently differed in their view of its significance—whether it was pathological or physiological. In this instance there was apparently no disturbance of the field of vision. Personally, he would favor the diagnosis of paralysis agitans.

Dr. EDWARD D. FISHER said he had seen a case very similar to the first one shown by Dr. Jelliffe, where there was evidently a lesion in the crural tract, but in that case the tremor was constant and increased on motion. The second case he would be inclined to look upon as a paralysis agitans rather than a multiple sclerosis.

Dr. B. ONUF suggested that in the second case there might be a diffuse brain sclerosis instead of a multiple sclerosis.

Dr. L. PIERCE CLARK said the two cases shown by Dr. Jelliffe impressed him very much as they had Dr. Sachs, and for the same reason. He was surprised to hear from the discussion that paralysis agitans should be looked upon as such an entity, and he thought it was rather premature to insist upon an anatomical basis for that disease. The tests in the first case showed that there was a distinct alteration of the vibrations to the intention type of tremor, and he believed his was a case of paralysis agitans, while the second was one of disseminated sclerosis. He had seen a case of paralysis at the Vanderbilt Clinic in a man, twenty-nine years old, although he looked older on account of the mask like expression of the face which was customarily found among patients of this class.

Dr. SACHS said he had never seen a rapid tremor that he could account for by any mid brain lesion.

Dr. JELLIFFE, in closing, said he felt justified in inferring that both these cases were of a similar type, and that the first represented the beginning stage of what might ultimately develop into the condition of the second. He was inclined to believe that in both instances the process was one of multiple sclerosis, but one which was localized at first and primarily in the mid brain structures. Here we had mid brain, or paralysis agitans, types of multiple sclerosis, the multiple sclerotic area involving those pathways which in the more recent works on this subject were referred to as being involved in paralysis agitans. As to the character of the tremor, at least three definite types of tremor originating in the mid brain structure, depending on the point of interruption of the mechanism, were to be distinguished. These were the athetoid, the paralysis agitans like, and the intentional tremor. From the more recent studies of this subject we were able to say in just what portion of the arc the mechanism was interrupted. In both cases he had shown the tremor was like that of paralysis agitans. The presence of vasomotor signs indicated possibly the implication of the thalamus, while the eye signs pointed to lesions located near the red nucleus.

Address of the Retiring President.—Dr. L. PIERCE CLARK, in retiring from the presidency, briefly sketched the work of the society during the past two years and emphasized the importance of giving more attention in the future to the beginning neuroses and psychoneuroses, the milder forms of the frankly established insanities. He also suggested that the case presentations be made more thorough, and that some provision be made, if possible, for those members who were interested to look over the clinical material before the general discussion was called for in open meeting.

A Summary of the Origins, Transformations and Present Day Trends of the Paranoia Concept.—Dr. SMITH ELY JELLIFFE made this the subject of his presidential address. After referring to the antiquity of the term paranoia, which was even prehippocratic, he rapidly sketched the varying concepts of the condition from the time of Celsus and Aretæus, through the long periods of the medicine of the monasteries, the later work of Plater, Vogel, Plocquet, Pinel, and Heinroth (1808), where one found the first approach of that century old discussion, the chief reverberations of which still lingered in our present day psychiatry. The concepts given in the textbook of Krafft-Ebing represented the full bloom of the paranoid period, and his picture was all too recent to need much elaboration. The speaker then referred to the more recent work by Kraepelin and Freud, and expressed the hope that his review of the subject would serve to orient the present traveler as to the drift of opinion to-day relative to the paranoia question. It was almost trite to say that with each new generation, newer methods of solving old problems arose, and that refinements in methods of analysis with sounder syntheses resulted. Old lines faded away, new boundaries were run, and radical rearrangements were everywhere apparent. This was as it should be; it was an indication of healthy mental activity, and in no field of psychiatry was this forward push more apparent than in the consideration of the paranoia domain. Seen from one point of view, the trend of development seemed to be tending toward an elimination of the concept entirely. Like the famous snakes in Ireland—so with paranoia; one might almost say that "there were none." On the other hand, another present day trend pointed in the direction of the unravelling of some most fascinating and highly important mental mechanisms which played a large rôle in the psychopathology of everyday life. The paranoid character, if he might so call it, promised to offer a clue to the further elucidation of many important situations, not only of mental pathology, but of many so called normal reactions.

Letters to the Editor.

THE RELATIONS OF TONE AND COLOR.

7 WEST MADISON STREET, CHICAGO, *April 16, 1913.*

To the Editor:

On page 56 of the JOURNAL, January 4, 1913, is reproduced a question and answer from the *Ladies' Home Journal* for January, 1913, to the effect that the distinguished pianist, Josef Hofmann, says that there is no relation between tone and color. That in your opinion settles it. Had the erstwhile blind pianist, known in my youth as Blind Tom, been asked what, if any, were the relations between blue and green and yellow he surely would have answered that there was no relation. For Tom born blind could never have had any appreciation of any color although he had a certain musical sense that Hofmann lacks; and Josef has no knowledge of or appreciation for any relation between tone and color, having never sensed any such relations. Nevertheless it is true that there is some relation, for I myself sitting at ease with my eyes closed at a comfortable distance from well played stringed instruments do experience the sensation of seeing colors with the varying tones. What one has sensed one is warranted in believing exists.

We all, or nearly all of us, have appreciated the relation between taste and smell and sight. The same object may cause nausea whether tasted or smelled or seen. Some are color blind, very few have any control over or pleasure from the sense of smell, and a differential sense of taste is rarely found. Hearing, like sight, is generally a utility sense, and as one may see perfectly and yet be color blind so one may have perfect hearing and have no sense of harmony.

It is hardly safe to say a thing is *not* just because we have not sensed it.

JOHN RIDLON, M. D.

Book Reviews.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Die Pathologie und Therapie der plötzlich das Leben gefährdenden Krankheitszustände. Von Sanitätsrat Dr. RICHARD LENZMANN, prakt. Arzt und Oberarzt am Diakonenkrankenhause zu Duisburg. Dritte, sorgfältig durchgearbeitete und vielfach vermehrte Auflage. Jena: Gustav Fischer, 1913. Pp. xvii-664.

The fact that a book of some 650 pages appears in a third edition and that it has been translated into three foreign languages is sufficient to indicate that there is a demand for it. The author presents, more or less briefly, those conditions which may lead to the sudden death of an individual. The subject matter is divided into numerous sections that deal with such conditions as are manifested in the different systems of the body. Lesions of the brain and cord are discussed first. Then are reviewed those of the respiratory, the circulatory, the intestinal, and the urinary tracts. The last two portions deal respectively with abnormal conditions during pregnancy, delivery, and the puerperium, and with sudden death due to poisoning. This book is interesting and full of information, but just what the advantage of this method of presentation is over the teaching of medicine in the usual textbooks is not clear. Practically any disease may terminate suddenly, so that such a happening does not help in determining what the preexisting disturbance may have been. For purposes of reference, however, to explain the way in which the death of an individual had taken place, this volume would be useful.

Beiträge zur Klinik der Infektionskrankheiten und zur Immunitätsforschung (mit Ausschluss der Tuberkulose). Herausgegeben von Professor Dr. L. BRAUER, ärztlichen Direktor des Allgemeinen Krankenhauses Hamburg-Eppendorf. Redaktion: Für die Originale, Dr. H. Schottmüller und Dr. H. Much. Für die Ergebnisse, Professor Dr. H. Lüdke. I. Band, 2 Heft. Würzburg: Curt Kabitzsch, 1913. Pp. 230-446.

Of the various original articles here presented, one by Abderhalden takes up very extensively the recognition of foreign substances in the blood by means of dialysis, and of optical reactions and the application of these methods in pathology. Leschke contributes to the serological diagnosis of tumors. He reviews the work done with complement fixation and reports experiments of his own. He finds that all sera from normal individuals can dissolve cancer cells to a greater or less degree. He notes, however, that it is impossible to draw a line between the minimum solution of cells by tumor sera and the maximum produced by sera from other diseases. He feels, though, that it is not impossible, that, by means of improved technic, this method may become of practical value. Hässner contributes a paper on the regeneration of renal epithelium in diphtheria, while Römer devotes thirty-four pages to a presentation of bacteremia in abortions and its general significance. Lüdke reviews mixed and secondary infections, and Uffenheimer and Awerbuch give a critical résumé of 276 articles dealing with anaphylaxis in acute exanthematous diseases, and with special reference to the action of pepton. All of the contributions are interesting and of distinct value.

Lehrbuch der spezifischen Diagnostik und Therapie der Tuberkulose. Für Aerzte und Studierende. Von Dr. BANDELIER und Dr. ROEPKE. Siebente, gänzlich umgearbeitete Auflage. Mit einem Vorwort von Wirkl. Geh. Rat Prof. Dr. R. KOCH, Exzellenz. Mit 25 Temperaturkurven auf 7 lithographischen Tafeln, 2 farbigen lithographischen Tafeln und 5 Textabbildungen. Würzburg: Curt Kabitzsch, 1913. Pp. xii-339.

In these days when tuberculosis is the question of the hour such a book as this is a very valuable production. The diagnosis of this disease in its early stages is always a matter of difficulty as far as physical signs are concerned. Consequently it is necessary to employ methods that, on account of the delicacy of the reactions, are correspondingly difficult to interpret. The first part, therefore, of this volume is devoted to a clear and comprehensive discussion of the theories of the tuberculin reaction and the factors concerned in its action. There is given in detail the technic to be employed in administering the various cutaneous tests in which tuberculin is used. The question of the specific therapy receives the important consideration that it deserves. The underlying factors of the tuberculin treatment and the technic are given, and then follows a very complete review of the various forms of tuberculous products, twelve in all, employed in causing an active immunization. A brief discussion of four substances used in passive immunization and in vaccination is followed by a chapter devoted to the indications for the employment of tuberculin. The closing chapter gives a complete summary of the facts previously given. In its three hundred pages, this book has much that is important and useful.

Die Erkrankungen des weiblichen Genitales in Beziehung zur inneren Medizin. Von Priv. Doz. Dr. A. BLAU, Priv. Doz. Dr. R. Th. JASCHKE, Prof. Dr. Fr. KERMAUNER, et al. Redigiert von Prof. Dr. L. VON FRANKL-HOCHWART, Hofrat Prof. C. VON NOORDEN, und Geh. Medizinalrat Prof. Dr. A. VON STRÜMPELL. II. Band: Akute Infektionskrankheiten, Schwangerschaftstoxikosen, Eklampsie, Sepsis, Hautkrankheiten, Asthenie, Enteroptose, Metastasen der Tumoren, Nervenkrankheiten. Mit 7 Abbildungen. Wien und Leipzig: Alfred Hölder, 1913. Pp. xix-988.

To attempt to give a detailed review of a volume of nearly a thousand pages would require more space than can be granted. That it is a part of the Nothnagel *System of Medizin* is in itself sufficient recommendation. This second volume deals with the acute infectious diseases, the toxemias of pregnancy, eclampsia, sepsis, diseases of the skin, asthenia, enteroptosis, tumor metastasis, and nervous diseases. Considerable space is given to a presentation of the relation of septic conditions to internal medicine. Although one appreciates in a general way the effect of local conditions on the body as a whole, it is not until one reads such an article as this that the correlation of all parts appears clearly. The matter of metastasis in malignant disease is very carefully and exhaustively considered. The various forms of growths are reviewed, the methods of metastasis and the clinical manifestations are discussed. Space is also given to the appearance of metastatic growths of the genitals, from those originating in other parts of the body. Concerning eclampsia, Neu, the author of the chapter, believes that there can be no doubt that it is an intoxication arising from placental abnormalities. This volume is of distinct value.

Pocken und Vaccinationslehre. Von Dr. G. JOCHMANN, Professor an der Universität in Berlin. Mit 20 Abbildungen im Text und 6 Tafeln. Wien und Leipzig: Alfred Hölder, 1913. Pp. iv-297.

This interesting volume of Nothnagel's *System of Medizin* takes up in detail two very important subjects, smallpox and vaccinia. Starting with a brief history of smallpox, the etiology, clinical appearances, both usual and abnormal, and the pathological lesions are dealt with. Diagnosis, prognosis, prophylaxis, and treatment are satisfactorily discussed. Under the heading of prognosis the statement is made that if the mortality at present from smallpox were the same as in the eighteenth century, 160,000 people would die each year in Germany. The actual condition, however, is that for the past ten years the average number of deaths per annum has been thirty-eight. To vaccination more attention is given than to smallpox itself. The discovery and the dissemination of the method are reviewed, and the ways of obtaining the virus are presented. The technic is described in full, as well as the appearances of the eruption and the various forms of possible contamination. The chapter dealing with the results of vaccination from a statistical point of view is an extremely valuable one. No person, except the most blinded partisan, could fail to be impressed by the figures and tables shown. The subsequent chapter dealing with the antivaccinationists is short but very good. Their arguments, or at least claims, are taken up briefly, and quietly but thoroughly disposed of. The list of ills that are alleged to follow vaccination is truly marvellous, everything from growing hoofs and a tail to a general degeneration of the human race.

Meetings of Local Medical Societies.

MONDAY, *May 5th.*—Clinical Society of the New York Throat, Nose, and Lung Hospital; German Medical Society of the City of New York; Utica Medical Library Association; Niagara Falls Academy of Medicine; Roswell Park Medical Club, Buffalo; Hornell Medical and Surgical Association; Practitioners' Club, Newark, N. J.; Hartford, Conn., Medical Society; Brooklyn Hospital Club.

TUESDAY, *May 6th.*—New York Academy of Medicine (Section in Dermatology); New York Neurological Society; Clinical Society of the West Side German Dispensary and School for Clinical Medicine; Long Island Medical Society; Buffalo Academy of Medicine (Section in Surgery); Ogdensburgh Medical Association; Oswego Academy of Medicine; Syracuse Academy of Medicine; Medical Association of Troy and Vicinity; Amsterdam Medical Society; Lockport Academy of Medicine; Hudson County, N. J., Medical Association; Bridgeport, Conn., Medical Association.

WEDNESDAY, *May 7th.*—Brooklyn Society for Neurology; Society of Alumni of Bellevue Hospital; Harlem Medical Association; Psychiatrical Society of New York; Society of Alumni of St. John's Hospital, Brooklyn (annual); Bronx Medical Association; Schenectady Academy of Medicine; Elmira Academy of Medicine.

THURSDAY, *May 8th.*—New York Academy of Medicine (Section in Pediatrics); Brooklyn Pathological Society; West Side Clinical Society; Gloversville and Johnstown Medical and Surgical Association; Physicians' Club of Middletown, N. Y.; Blackwell Medical Society of Rochester; Jenkins Medical Association, Yonkers; Buffalo Ophthalmological Club; Jamestown Medical Society; Society of Physicians of the Village of Canandaigua.

FRIDAY, *May 9th.*—New York Academy of Medicine (Section in Otology); New York Society of Dermatology and Genitourinary Surgery; Eastern Medical Society of the City of New York; Society of Ex-internes of the German Hospital; Saratoga Springs Medical Society (annual).

SATURDAY, *May 10th.*—Therapeutic Club, New York.

Official News.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending April 26, 1913:

Ames, M. H., Passed Assistant Surgeon. From waiting orders to duty at the Navy Yard, Boston, Mass. **Bass**, J. A., Assistant Surgeon. Detached from duty at the Naval Hospital, Canacao, P. I., and ordered home to await orders. **Bishop**, L. W., Surgeon. Detached from the *New Jersey* and ordered home to await orders. Thomas, G. E., Assistant Surgeon. Detached from the *Helena* and ordered home to await orders. **Tompkins**, J. A., Assistant Surgeon, Medical Reserve Corps. Detached from the Navy Recruiting Station, New York, and ordered to the Navy Recruiting Station, Buffalo, N. Y. **Wilson**, H. D., Surgeon. Detached from the Navy Recruiting Station, Buffalo, N. Y., and ordered to the *New Jersey*.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending April 26, 1913:

Bushnell, G. E., Colonel. Left Fort Bayard, N. M., on April 15th, on ten days' leave of absence, with permission to apply for twenty days' extension. **Chase**, A. M., First Lieutenant, Medical Reserve Corps. Left Fort Dade, Fla., on April 17th, for his home, and honorably discharged from the Service after five months' leave. **Denton**, W., First Lieutenant. Detached from duty at Fort Sam Houston, Texas, and ordered to Leon Springs, Texas, for detached service. **Farrow**, E. J., First Lieutenant, Medical Reserve Corps. Ordered to Fort Dade, Fla., for temporary duty. **Ingalls**, R. E., First Lieutenant. Left Fort Ward, Wash., on April 15th, for Fort Liscum, Alaska, and other posts in Alaska. **Powell**, W. A., Captain, Medical Corps. Left Presidio of San Francisco, Cal., on April 18th, for Yosemite National Park, Cal., for duty during the season. **Siler**, J. F., Captain, Medical Corps. Left New York, N. Y., on April 14th, for Spartanburg, S. C., for duty with the field party of the Thompson-McFadden Pellagra Commission. **Stephenson**, William, Colonel. Left Governor's Island, N. Y., on April 21st, for Chicago, for duty as chief surgeon of the Central Department.

Births, Marriages, and Deaths.

Born.

Anspach.—In Philadelphia, on Monday, April 14th, to Dr. and Mrs. Brooke M. Anspach, a daughter. **Hull.**—In Bremerton, Wash., on Monday, April 14th, to Passed Assistant Surgeon Harry F. Hull, United States Navy, and Mrs. Hull, a son.

Married.

Curtin—Quinn.—In Waltham, Mass., on Wednesday, April 23d, Dr. John J. Curtin and Miss Katherine Gertrude Quinn. **Dever—Cullen.**—In Hazelton, Pa., on Tuesday, April 22d, Dr. Neil J. Dever, of Freeland, and Miss Gertrude Cullen. **Hurtt—Barber.**—In Mifflinburg, Pa., on Thursday, April 17th, Dr. Harry Hurtt, of Washington, D. C., and Miss Mary Harris Barber. **Manges—Bosley.**—In Baltimore, on Saturday, April 19th, Dr. Willis F. Manges, of Philadelphia, and Miss Marie Elise Bosley. **Simon—Webster.**—In Malden, Mass., on Thursday, April 17th, Dr. Harold F. Simon, of Winchester, and Miss Lillian M. Webster. **Spellman—Hanger.**—In Cincinnati, Ohio, on Saturday, April 19th, Dr. John Spellman and Miss Kitty Hanger.

Died.

Ball.—In Beloit, Wis., on Friday, April 18th, Dr. Samuel Ball, aged seventy-two years. **Campbell.**—In Jamaica, N. Y., on Friday, April 18th, Dr. Robert Campbell, aged sixty-two years. **Capron.**—In Albany, N. Y., on Tuesday, April 22d, Dr. Arthur S. Capron, aged sixty-three years. **Carney.**—In Brooklyn, on Tuesday, April 22d, Dr. James Lester Carney, aged sixty-three years. **Fox.**—In Hartford, Conn., on Thursday, April 17th, Dr. Charles James Fox, aged fifty-nine years. **Hart.**—In Wu Ho, China, on Monday, April 14th, Dr. Edgerton H. Hart, of Toronto, Canada. **Johnson.**—In Watertown, N. Y., on Wednesday, April 16th, Dr. Parley Hall Johnson, of Adams, aged seventy-four years. **Kissel.**—In Brooklyn, on Saturday, April 19th, Dr. Jacob Kissel, aged thirty years. **Koons.**—In South Orange, N. J., on Monday, April 22nd, Dr. Oscar H. Koons, of Brooklyn, N. Y., aged sixty years. **Maclean.**—In Spencerville, Ontario, on Wednesday, April 16th, Dr. S. C. Maclean, aged sixty-six years. **Mulhern.**—In Greenfield, Iowa, on Saturday, April 19th, Dr. Thomas W. Mulhern, aged seventy years. **Preston.**—In Chester, Pa., on Monday, April 21st, Dr. Frederick L. Preston. **Putman.**—In Bridgeton, N. J., on Monday, April 14th, Dr. Joseph H. Putman, aged eighty years. **Richards.**—In Trenton, N. J., on Tuesday, April 22d, Dr. Owen B. Richards, aged seventy-five years. **Sherwin.**—In Woodstock, Vt., on Thursday, April 17th, Dr. Orlando W. Sherwin, aged seventy-six years. **Small.**—In Eastport, Me., on Sunday, April 20th, Dr. Edward M. Small, aged sixty-six years. **Sutton.**—In Bath, N. Y., on Friday, April 25th, Dr. Orlando Webb Sutton. **Swango.**—In Toliver, Ky., on Sunday, April 20th, Dr. William Swango. **Thompson.**—In Bridgeport, Conn., on Friday, April 18th, Harriet Adaline Thompson. **Treuholtz.**—In Fort Bayard, N. M., on Tuesday, April 15th, Captain Clarence A. Treuholtz, Medical Corps of the United States Army. **Van Deinse.**—In New York, on Tuesday, April 22d, Dr. William F. Van Deinse. **Whitman.**—In St. Paul, Minn., on Sunday, April 20th, Dr. Alvah F. Whitman, aged eighty-one years. **Yingling.**—In Baltimore, on Monday, April 14th, Dr. Joel Yingling, aged sixty-five years.

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Original Communications.

INSANE AND MENTALLY DEFECTIVE ALIENS ARRIVING AT THE PORT OF NEW YORK.

By GEORGE W. STONER, M. D., Sc. D.,
New York,
Senior Surgeon, United States Public Health Service; Chief Medical Officer, Immigration Station, Ellis Island.

That the people of the State of New York and of the whole country are seriously interested in the question of immigration, and especially in the results of the medical examination of arriving aliens at the chief port of entry, goes without saying.

Of the many American citizens, native, as well as naturalized, who visit Ellis Island for one purpose or another a considerable number call at the medical office. Among the latter there are not infrequently medical men, general practitioners as well as specialists from different parts of the country as well as from New York State and city, and when these professional brethren remain long enough to witness the work and note the results accomplished, not only on the line of primary medical inspection but also in the medical examination rooms and in the Immigrant Hospital, the expressions and comments of such visitors are usually very complimentary to the medical officers thus engaged.

Of course on busy days when there are five thousand or more aliens, and even on ordinary days when there are only three thousand or a less number presented for examination, the visitors, even the laymen, recognize the fact that the volume of the work is greatly out of proportion to the number of men available for its performance. They all join with us in the opinion that the results might be improved, that among the thousands arriving every day there are probably many more physically and mentally diseased or defective persons than can possibly be detected by the necessarily hurried examination that must be given to most of them, on the line, while hundreds are turned aside every day, for secondary examination, and many are sent to the hospital for further observation. The bulk of the aliens must be disposed of by the commissioner of immigration on the day of arrival so as to guard against an overwhelming congestion, and steadily moving lines of primary medical inspection are necessary as a preliminary to that end.

Attention has often been invited to these matters. Recommendations are continually being made for an increase in the corps of medical officers of the United States Public Health Service so as to make available for Ellis Island duty an additional number of such officers; which, as already indicated, is the best practical solution of the problem.

It may be all right, with a good end in view, to invite the attention of the people of the State and the country at large to the enormous expenditure of $8,000,000 a year for the maintenance of 32,000 inmates of the New York State hospitals for the insane; to the forty-eight per cent. of this great cost chargeable to the flood of foreign insane; that forty-eight per cent. of the patients in the said hospitals are alien immigrants, whereas in the State at large only thirty per cent. of the population are foreign born; that the city contains only forty per cent. foreign born persons; and then to these percentages ascribe the annual outlay of $3,500,000 for the care and maintenance of the immigrant insane and, consistently (?) probably also make chargeable to the immigrant forty-eight per cent. of the $60,000,000 expended in the construction of fourteen State hospitals.

To the general proposition that in the interest of all the people in this country improvement should be effected in our immigration laws there will probably be no dissenting voice. We are all agreed that better facilities—additional and larger examination rooms and detention halls—should be provided, and that the number of medical officers of the United States Public Health Service should be largely increased. But when an assertion is made and attempted to prove by statistics, that the expense of $3,500,000 a year to the State of New York is due to the lack of competent medical officers at Ellis Island, it may be well to look into the matter a little further.

During the year 1911, if I am correctly informed, the total number of persons admitted to the New York State hospitals for the insane contained only eighteen per cent. foreign born. This is a great reduction from forty-eight per cent., and much better indeed than the standard set forth by a recent critic when he said "if these foreign born people were of normal quality, if they were the kind of material that we want for the building up of this country, they would not show an insane percentage of more than thirty throughout the State." Some people seem to be dissatisfied because the immigration service which was formerly under the supervision of the State is now and for many years has been wholly under the control of the federal government.

It is said that efforts have been made to correct

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this error, that the State has repeatedly asked permission to inspect incoming shiploads and has offered the federal government to supply alienists to examine immigrants, knowing that the one immigrant hospital for the insane at Washington is wholly unable to train a sufficient number of alienists, but that the government has decried its legal ability to accept such offer; that several years ago the State of New York established a bureau for the purpose of supervising the deportation of foreign born persons who, if insane within three years after their arrival in this country, are deportable under federal law, but that the authorities at Ellis Island "would not permit the bureau's representatives on the government reservation except as a courtesy." So much for the contention of one side. But now let us have the other side.

Pursuant to State law (act approved, Albany, 1904) the New York State Commission in Lunacy appointed a subordinate board of alienists composed of three medical men of the State, each one of whom was supposed to be extraordinarily well qualified for the purpose of detecting or pointing out not only the insane but all mental defectives on board the ships arriving at Quarantine, at the entrance of the harbor where the State is in full control, or at Ellis Island where the federal government has jurisdiction.

At Quarantine, where the State has full control and jurisdiction, there was, so far as can be learned, nothing to hinder the board or the different members of the board in the performance of the official duties for which they were appointed, and while the State board as such could have no official status at Ellis Island (federal reservation), the members of the board were not only heartily welcomed, personally and professionally, but each one of them by direction of the department in Washington was, under date of March 28, 1906, officially invited by the chief medical officer to witness the medical examination of immigrants at Ellis Island, to see how all the medical work was being performed, and if they had any reason to think that any immigrant who had been passed was insane, they were especially invited to call attention to the case, and the immigrant would be detained for further examination.

There seems to be no record at Quarantine of any duty performed there by the State board of alienists, and at Ellis Island, after different members of the board had been in attendance for a considerable period without calling attention to any cases, they were very free in expressing themselves to the effect that everything seemed to be going on very well. Nevertheless, Ellis Island was favored with their company or with one or another of the members of the board for a period of several years, notwithstanding the fact that at Quarantine the State has complete jurisdiction and where, unhampered by federal regulations, they might have spotted or tried to tag for the information of the medical officers at Ellis Island all the insane and mentally defective aliens on the arriving ships, and possibly by this means valuable assistance might have been rendered.

Among the officers of the United States Public Health Service on duty at Ellis Island charged under the law with the responsibility of examining as to their physical and mental condition all arriving aliens, there are always a number of medical men who have not only qualified for their appointment by passing the rigid competitive examination prescribed by the government in all branches of medical science, but who have given much attention to and have had special experience in mental disease work in connection with their service in hospitals for the insane, not only in Washington, but also in State insane asylums in different parts of the United States. A large proportion of the doctors on duty at Ellis Island have had such experience. It is only fair to state, however, that it is possible for some men to acquire as high a degree of ability or practical efficiency by one or two years' experience at Ellis Island as can be reached by some others through a much longer period of residence in an insane hospital. In this connection it is interesting to note that while State or local physicians are occasionally appointed as acting assistant surgeons in the United States Public Health Service for duty in connection with the examination of arriving aliens, commissioned medical officers of this service are often called for to aid in State or municipal work. There are at present several commissioned medical officers serving in such capacity. Two years ago one was loaned to the State of New York, that is to say, he was granted a prolonged leave of absence for the sole purpose of enabling him to accept an appointment in the State service. After serving a very short time as a member of the State Board of Alienists he was made chairman of that body. This action on the part of the State authorities was in itself quite a compliment to the federal service and a recognition of the qualifications of the officer concerned. But it is especially interesting to note in this connection that while the said officer is professionally well qualified, much if not most of the valuable experience that made him eligible for such position was acquired during his periods of duty at stations of the United States Public Health Service and particularly at Ellis Island. The State Board of Alienists was established by law in 1904 (laws of New York, Chap. 326). The law referred to was entitled, "An act to amend the insanity law providing for the examination of immigrants at the port of New York to ascertain their mental condition," and reads as follows:

Section I. Article one of chapter five hundred and forty-five of the laws of eighteen hundred and ninety-six, entitled "An act in relation to the insane, constituting chapter twenty-eight of the general laws," is hereby amended by adding at the end thereof a new section to be known as section eighteen and to read as follows:

18. Board of alienists for examination of insane, idiotic, imbecile, and epileptic immigrants; powers and duties.—A board of alienists for the examination of insane, idiotic, imbecile, and epileptic immigrants is hereby established. Such board shall consist of a chief examiner and two assistant examiners, to be appointed by the commission in lunacy. The chief examiner shall be a reputable physician, a graduate of an incorporated medical college, of at least ten years' actual experience in the practice of his profession, and of at least five years' experience in the care and treatment of the committed insane. The two assistant examiners shall be reputable physicians, graduates of an incorporated medical college, of at least three years' actual experience in the practice of their profession, and of at least one year's experience in the care and treatment of

the committed insane. The chief examiner shall receive an annual salary of five thousand dollars, and each assistant shall receive an annual salary of three thousand dollars.[1] . . . Arrangements shall be made by the commission in lunacy for the proper accommodation of such board either with the board of commissioners of quarantine at the port of New York or with the proper authorities of the United States having control of the inspection and examination of immigrants at such port. Such board shall inspect and examine all immigrants coming into this country at the port of New York for the purpose of ascertaining whether any of them be insane, idiotic, imbecile, or epileptic. The board shall notify the proper authorities of the United States having control of the enforcement of the immigration laws at such port, of such immigrants as are found to be insane, idiotic, imbecile, or epileptic, and shall arrange for their deportation in accordance with the provisions of such laws. . . . The duties hereby imposed upon such board shall be performed under the supervision of the commission in lunacy, and in accordance with rules adopted by it. The commission may impose such other duties on such board as it may deem necessary and proper for carrying out the general purposes and intent of this section. The commission may employ such other persons as they deem necessary for the purpose of carrying into effect the provisions of this section.

During the last session of the legislature the name of the State Commission in Lunacy itself was changed to the State Hospital Commission, and the name of the State Board of Alienists has been changed to the Bureau of Deportation.

Considerable criticism has been directed against the federal government for not as the critics would have it, more willingly helping the State authorities in the matter of enforcing the federal law providing for the deportation of all foreign born persons who develop insanity within three years after their arrival in this country. "This law," they say, "is not enforced to any extent at present because the State has no official status at Ellis Island."

As a matter of fact, the federal government has made great effort to aid the State authorities in the enforcement of the law with respect to aliens who have become insane or public charges in State or local institutions from causes existing prior to landing.

A few years ago, at great expense, officers of the Immigration Service were sent all over the United States for the purpose of visiting State institutions and acquainting the superintendents or officers in charge with the provisions of the law in relation to the deportation of aliens who have become public charges. Only a small proportion of the foreign born inmates of insane asylums were found to be deportable under the law, for the reason that the vast majority of such inmates did not become public charges within three years after the date of their entry into the United States.

According to the report of the Commission in Lunacy for the year 1910, forty-three per cent. of the foreign born committed to the State hospitals for the insane that year had been residents in this country from three to nineteen years, and forty-four per cent. were in the United States twenty years and over before they were committed. Only thirteen per cent. came within the three year limit. But to effect deportation under federal law of even this small percentage it must first be shown that the aliens are insane and public charges from causes existing prior to landing. It is gratifying to note, however, that the principal steamship lines have voluntarily agreed, under certain conditions and in the interest of the State, to receive on board their ships and return to the country whence they came a certain number or class of insane aliens regardless of the length of time that has elapsed since they arrived in this country, thus waiving for the time being their right under existing law to refuse to furnish transportation for any lunatics who have been in this country more than three years. And now, it would seem, the critics are willing to concede that insanity among landed aliens is sometimes due to causes arising subsequent to landing; that "in many of the defectives the mental taint did not become evident until two or three years after they landed," and hence the inability to detect such cases on arrival or determine any abnormal mental condition calling for certification.

In this connection it is interesting to quote from a remarkably instructive and comprehensive address delivered by Dr. Charles W. Pilgrim, superintendent of the Hudson River State Hospital, Poughkeepsie, New York, president of the American Medicopsychological Association, at the Denver meeting in June, 1911: "On October 1, 1910," he says, "there were in the various institutions of the State (New York) 32,657 insane. In 1896 there were in the almshouses and hospitals but 16,008. We thus see that there was a recorded increase of 104 per cent. in the insane population during the twenty years mentioned, while the general population increased by fifty-two per cent. during the same period. The recent investigations of Doctor Searcy show similar results in the South. In Alabama the increase in admissions to hospitals for the insane during the past ten years was forty-five per cent., while during the same time the population of the State increased by sixteen per cent."

"Wherever careful investigations have been made," says Doctor Pilgrim, "similar conditions have been shown to exist throughout the civilized countries of the world. I think, therefore, that it is time for us to acknowledge that insanity is increasing much faster than the general population, and that we have been mistaken in attributing the apparent increase solely to the better appreciation of institutional care and the resultant accumulation of cases."

But is it not more than possible that improved methods of examination for commitment or less rigid requirements for admission contributed something toward increasing the number admitted to the hospitals? Quoting from Doctor Stedman, he says: "An inquiry instituted by the Massachusetts Board of Insanity in 1904 showed that 685 physicians of that commonwealth had treated 2,428 cases of mental disease during that year and that only fifty-five per cent. had been committed to hospitals for the insane, while the remaining forty-five per cent. had been treated at home, or at least outside of institutions for the insane." The report does not say how many of them were aliens or how many native born. Is it not a fact that many aliens or foreign born persons, and the children of the foreign born, knock at the doors, so to speak, of public institutions on the slightest provocation, while the

[1]Subsequently increased to $5,000.

American or the children of the American avoid the public institution so far as they can? Witness the case of the young man (Geib), the pampered son of a rich mother and of a father himself a physician and alienist of an adjoining State, who only after killing his victim in cold blood was pronounced insane, although the father said he had known for a number of years that the boy was all wrong. Now, how long would an immigrant boy of this mental type probably run at large? Or, on the other hand, how many youths of similar type are now parading the avenues or hanging about the street corners of New York city or, if of the more affluent class, probably entertaining or furnishing amusement for some delectable company on a roof garden?

Aliens who become insane or public charges within three years after arrival may be deported without much trouble or expense to the State. But if the date of their admission to State hospitals varies from one to twenty years after landing, as for example in the year 1910, and if eighty-seven per cent. are not committed until after the first three year period, then only thirteen per cent. are deportable under existing federal law; nor would it be entirely fair to charge against the efficiency of the medical examination the higher percentage of the foreigners admitted to State hospitals.

It is proper to say that the State board referred to soon began to exercise its functions by reporting to the commissioner of Immigration all the public charge aliens the different members of the board could find in State or local institutions who were deportable under the law, and they now have to their credit a large number of such deportations.

In this way a duty well worth while and of great value is now being rendered to the State. But why, some one has asked, was this matter allowed to lie dormant so long? The federal law was enacted in 1882, whereas the State board was not appointed or did not become actively engaged in the work until 1905 or 1906. And it was just about this time, too, that because of the heavy immigration, and the relatively large number of inferior persons among the arriving aliens, that the number of federal medical officers on Ellis Island duty was increased and the facilities for performing their duty improved to such an extent that a larger proportion actually and relatively of all manner of physically or mentally diseased or defective aliens began to be detected and certified on arrival than was the case before that time; hence not so many deportable aliens are now being landed, and of necessity a less number become public charges in State hospitals; and, because of the same agencies continually at work and the further improvements soon to be effected, it is reasonable to expect that the number will be still further reduced as time goes on.

That many insane and mentally defective persons can be detected on arrival is shown by the number which have been, and are continually being, certified at Ellis Island. Many of the mentally defectives are of a type seldom seen in hospitals for the insane, and are more difficult to detect on primary inspection than are some forms of insanity.

A more careful inquiry into matters pertaining to the medical office or the Immigration Service proper at Ellis Island would probably convince any fairminded person that remarkably good work is being done there, in behalf of the immigrant as well as for the good of the State, but, as before stated, all agree that the space now occupied as medical examination rooms should be largely increased, that the number of medical officers should be at least doubled, and that a sufficient force of interpreters should be employed to meet all requirements; also that in the question of deportation no limit as to length of residence in this country should apply to any defective or otherwise excludable unnaturalized immigrant.

The law requires that the physical and mental examination of all arriving aliens shall be made by medical officers of the United States Public Health Service, and this service is a bureau of the Treasury Department. It is therefore up to this department to furnish the necessary number of medical officers, provided always that the necessary appropriations are available.

The interpreters are officials of the Immigration Service proper. The Immigration Service is in the Department of Commerce and Labor. It would therefore seem to be to the advantage of all concerned if a sufficient number of interpreters were employed by this department to meet all requirements, and surely the needs of the medical office in this respect ought to be regarded as of first importance.

PRELIMINARY REPORT ON THE DIAGNOSIS OF POSTPYLORIC (DUODENAL) ULCER BY MEANS OF SERIAL RADIOGRAPHY.*

By Lewis Gregory Cole, M. D.,
New York.

The frequency with which postpyloric (duodenal) ulcers occur, unrecognized by clinicians and even by surgeons at the time of operation, is one of the marvels of the present medical age. The clinical and surgical aspects of this subject have been carefully considered by Wier, Moynihan, Codman, Mayo-Robson, the Mayo brothers, and others; but the radiological contributions have been rather inconclusive, and are limited to those by Bier, Kreuzfuchs, Strauss, and Ashbury (gastric and duodenal ulcers). Two methods have been employed by these observers. One depends on the contention that bismuth will adhere to the surface of an ulcer, or become incarcerated in its crater. But the failure to differentiate these "flecks" of bismuth from normal retention in the cap, and the fact that they occur very infrequently, are the weak points in this procedure. The second method is the study of symptom complices, which, as the name suggests, are only groups of symptoms, recognized by radiography or fluoroscopy.

The method to be described herein depends on recognizing the actual deformity of the gut, caused by the induration or cicatricial contraction surrounding an ulcer. Before one attempts to make a diagnosis of postpyloric (duodenal) ulcer by this meth-

*Read before the Syracuse Academy of Medicine, April 5, 1913.

od of examination he must thoroughly comprehend the normal aspects of the cap (pilleus ventriculi), and the various nonpathological conditions which influence its appearance, as observed by serial radiography.[1]

The differentiation of postpyloric (duodenal) ulcer from prepyloric (gastric) ulcer and carcinoma, and the differential points between ulcer and gallbladder infection have been previously described.[2] Subsequent observations in pursuance of this and other diagnostic points will be communicated within the next month. They will include the physiology of the pylorus as observed radiographically, particularly the absence of a periodical relaxation and contraction of the pylorus, independent of peristalsis, the reservoir function of the cap (pilleus ventriculi), and the periodical propulsive peristalsis of the descending and horizontal duodenum. A careful study of the pathology of chronic duodenal ulcer, as described by Moynihan or Codman, is essential to its radiographic diagnosis. Of the pathological findings which they report, the following are especially important radiographically:

1. Ninety-five per cent. of duodenal ulcers occur in the first or ascending portion of the duodenum (cap).

2. The crater of the ulcer is usually about one centimetre in diameter, and surrounded by an area of induration, similar to a furuncle.

3. There are usually cicatricial contractions, resulting in a formidable narrowing of the lumen of the gut.

4. Healed ulcers result in a restoration of the mucosa, but a destruction of the muscular coat, which is replaced by connective tissue. The serous coat may or may not show evidence of adhesions.

It is obvious, from a comparative study of the normal cap and the pathological findings of duodenal ulcer, that induration and cicatricial contraction could not exist, without distorting the symmetry of the lumen of the cap. By means of serial radiography it has therefore been possible to reveal all of the usual pathological findings reported by Moynihan or Codman, the radiographic indications of which will be described and illustrated in a more comprehensive article on this subject, now in preparation. The same means frequently afford evidence of less extensive lesions, corresponding with the pathological findings of healed duodenal ulcer described by Codman.

The distortion of the cap (pilleus ventriculi) by chronic ulcer may be and must be differentiated from

1. Incomplete filling of the cap caused by
   a. Pylorospasm.
   b. Overactive peristalsis of the descending duodenum.
   c. Gastric ptosis with tortion on the gastrohepatic ligament.

2. Spasmodic contraction of the cap, due to irritation at some distant point, such as appendicitis, kinks of the ileum, colon ptosis, renal calculus, etc.

3. Indentation in the cap from pressure of the descending duodenum, vessels in the gastrohepatic ligament, or the common bile duct.

The differentiation of postpyloric ulcer from adhesions of gallbladder origin is rather difficult, but some distinguishing characteristics have already been made, and more will be offered in the next communication. This differentiation is of more scientific interest than practical value, because if the lesion is sufficiently extensive, surgery is indicated in either case.

The negative or positive diagnosis of postpyloric ulcer by serial radiography is equally as accurate as the radiographic diagnosis of renal or ureteral calculus.

103 Park Avenue.

[1] *Archives of the Röntgen Ray*, April, 1912.
[2] *Archives of the Röntgen Ray*, October, 1912.

HIGH TENSION, HIGH FREQUENCY CURRENTS.*

Some of Their Uses in Therapeutics.

By J. Herman Branth, M. D.,
New York.

Textbooks teach and lead us to the way of *believing* in regard to cases of illness, but experience at the bedside teaches us to *know*. Many may believe that electricity has no remedial value, yet only those who *know* by study and experience can exercise judgment regarding the true value. It is true that there are many enthusiasts who overrate in a hobbylike method a remedial measure, be it electricity, hypodermic medication, surgery, hydropathy, dieting, exercise, or what not. Such is not the case with the writer, a general practitioner, a general observer; my observations are founded, not alone on textbook information, but also on personal experience which places me in the field of the *knowing* not only of the *believing*.

All those who have studied the science of electricity (as yet we are only on its threshold) *know* that electricity, principally high tension electricity, will urge metabolism into normal lines, and this will be the chief basis for my arguments. Let us first attempt to define high tension electricity. It is deemed that all currents which will leap through an air space or "gap" are high tension, whether these currents are produced by a static machine or a coil. A low tension current, say the commercial 110 or 220 volts, will be stopped by the thinnest sheet of paper or any poor conductor; not so with the high tension variety; in fact the higher the tension the more positive the transmission in a *straight* line, though Maxwell and Houston have asserted otherwise. Some years ago the speaker demonstrated that the extremely high tension current passes through every known insulator, either direct or by electric stress of opposite polarity, quantity also being obviously considered a factor. My colleague, Doctor DeKraft, shows this by cooking a potato or a piece of meat in the line of current passage. On the basis that high tension electricity in its passage would affect and correct metabolic disorders in an organ of the body (which was alluded to in an address by the writer some years ago) we applied it to glandular tumors of the neck with

*Read before the Medical Association of the Greater City of New York, January 20, 1913.

success. True, x rays were also used in some cases, but greater reliance was placed on the high tension, high frequency current.

All high frequency currents depend on a high tension current sent through a Leyden jar and on one or more spark gaps. I have attained a very high tension current by a Tesla coil step up transformer. This coil is an inverted coreless coil; the secondary inside, the primary outside. Without this arrangement it was impossible to avoid short circuit. This arrangement affords also an insight to understand the principle of induction, as air insulates the inner coil from the outer coil. By this means a very high voltage and very high frequency is attained, so high that it is above the nerve register; muscular contraction is thus avoided and the patient will stand the application. One of the wonders to us is the fact that the application of a high tension high frequency vacuum tube will give pain *only* when applied to a diseased part; not so on a healthy surface. When the patient approaches healthy conditions the tolerance grows in the same degree.

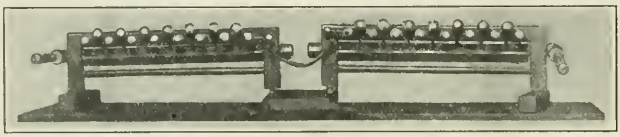

FIG.—The spark gap mechanism used by Doctor Branth for the production of high tension, high frequency currents.

The spark gap mechanism shown in the figure consists of a framework having one rigid bar carrying seven brass spheres of one half inch diameter. These spheres are mounted on insulation stems about one and one quarter inch apart. Parallel to this fixed row of spheres is an axle capable of rotation. This axle carries eight spheres similarly mounted, but so as to fit in between the spheres of the rigid bar above. By rotation of the lower axle its eight spheres can be turned either toward or away from the fixed spheres, thus lengthening or shortening the spark gaps. By shifting the connecting wires, any number of gaps can be chosen. With this mechanism a low x ray tube, backing up, say, a one half to one inch vacuum, may be changed into one backing up anywhere between four to six inches, or even more, and thus achieve the desired penetration. Without this multiple spark gap the tube will act just as soft as before. Now, in the treatment by high tension, high frequency currents of any degree of intensity of current can be achieved by including a greater or smaller number of spark gaps. The intensity can also be regulated to a degree by elongation of the individual spark gaps, which elongation is effected by rotating the axle carrying the lower row of spheres. The mechanism consists of two sets, one for each pole of machine. For x ray work, also, one set is used for each pole. Inverse current in x ray tube is evaded and the life of the tube is prolonged.

For high tension high frequency treatment the two sets are connected as in the figure. The machine's terminals must be drawn wide enough apart to drive the current through the spark gaps and avoid short circuit. A very great number of oscillations is thus achieved.

When a vacuum tube of a very high voltage apparatus is applied to the surface of the body, a pleasant warmth is felt, and the surface becomes red like a scarlet fever patch. This redness and warmth lasts about three hours. This redness is due to dilatation of the capillaries, more blood is attracted to that region, which, according to Metchnikoff, means increased phagocytosis, in other words, increased resistance to pathological intruders; at all events, let us call it increased vitality of the tissue cells. Now, what would happen, if this were a law, when the current is sent through an organ like the liver or kidney in subnormal condition? It would, to say the least, help or stimulate Nature to overcome abnormal conditions, be it hepatic cirrhosis or what not, if the vitality is not too exhausted to bar repair.

Again, what should follow applications of this current in arteriosclerosis, where the heart (not considering the direct influence of the hardened cardiac vessels) is tired out by constantly pushing the blood along the wirelike unyielding vessels, receiving less and less help from the growing inelasticity of the vessel walls? We should expect relief from a remedy acting like the high tension high frequency current by the bipolar method. On this hypothesis the patient, Mr. C., a retired hotelier, aged sixty-nine years, was sent to me by Doctor Schoenenberger. Mr. C. had chronic synovitis in both knee joints, also general arteriosclerosis. More than a year ago he was in the country for the summer, and had to be sent home owing to alarming cardiac symptoms. The foregoing line of treatment was instituted, and his general health is now as good as it can be for a man of his years, though the condition of his knees does not enable him to walk without crutches. He is now engaged in literary work. His mind is bright, his arms and hands are active, and when he sits at his desk few would suspect him of being sick or over fifty-five years old.

I would, however, express a word of caution here as to sending the current through the heart, not that the heat is too great, but the electric force might disturb the rhythm of a weak heart—it might stop the heart just like a very little force or blow will stop the pendulum of a clock, if the force is not parallel to the pendulum's movement.

When the x rays were discovered they were applied as a remedy for everything, which action at last earned discredit in many ways through careless and unscientific use. It should not be so with high tension high frequency currents, for they will not cure every disorder, but when intelligently used, like strychnine, arsenic, or any potent remedy, will act as a remedial measure in many disorders, and, let me say in parenthesis, often in disorders where we have no other remedy.

When combined with x ray treatment, the high tension high frequency current has given excellent results as demonstrable by the case of Mr. F., a

college student, also by the case of Mrs. K., who suffered from a large glandular tumor of the neck. The tumor was the size of a potato, interfered somewhat in swallowing food, moved with the larynx; part of the tumor was under the sternum and could not be palpated. She has been under treatment since April, 1911, with a few short interruptions. She was unable to take the treatment in the usual way, fearing x ray burn. She is still taking treatment about once a week. She is almost well, for the tumor seems to have disappeared, only the shrunken thick wall of the capsule remaining.

Tumors of the female breast often yield to the combined treatment. It is well known that these tumors generally, probably always, become malignant. There are patients here who recovered under this form of treatment. The knife is not always a sure remedy. Some two years ago a woman, Mrs. H., was treated in this way by us; she had a small tumor in the left mamma. The case did not improve rapidly enough to satisfy her, and she sought surgical intervention, which led into general carcinoma by metastasis, and ended in death last fall. She was about thirty years old. X ray treatment alone and without high tension high frequency current for tumors of the breast, or for that matter in the case of any deep seated malignant tumor, has not met with success in our hands. The knife would furnish better results than x rays alone, but the knife should cut far into the sound surrounding tissue to make certain that no contaminated lymph gets into the outlying tissue, or there will surely be a recurrence. A woman upon whom we operated some seventeen years ago, removing a cancerous breast weighing nearly four pounds, has had no recurrence, as her son informed me of her well being only a short time ago. Dr. Willard Parker Worster assisted in that operation. The success attained by x rays in superficial cancer is indisputable.

To study and understand the action of high frequency currents let us learn from a comparative lesson from Nature. Suppose there is an inflammatory lesion, a cut, a carbuncle, pneumonia, etc. Nature always supplies fever heat in the process of repair. We observe that if the fever in pneumonia or typhoid infection, etc., suddenly drops, death is near, which means that Nature gives up her task of repair; it tells us that the phagocytes are unable to conquer the pathological condition.

Now we can demonstrate with our apparatus that a stream of electricity means also a stream of heat in the line we choose through the body. Doctor DeKraft proves this by cooking a line through a potato or a piece of meat. This process modified to a degree within physiological intensity, should be of remedial value even more so, when we know that the proper electrical current will promote in the body cells the throwing off of waste and the taking in of nourishment. Is it then too much to assert that heat and increased phagocytosis are not entitled to remedial value?

It is by no means our desire to replace internal or external medication by electricity; indeed, the two often fit like hand and glove. We have observed that vital metabolism is stimulated by electricity. On this proposition we have treated girls with amenorrhea successfully, where iron medication without electricity had no effect at all, the iron passing off by the black stools; but as soon as static electricity is added the stools become lighter in color and the blood becomes richer in hemaglobin. This principle holds good not only in iron medication, but also in the administration of mercury, arsenic, strychnine, etc. Only half doses should be given under these circumstances.

May we venture another argument regarding very high tension electricity. All kinds of electricity are the same sort of force; what variation exists is only of pressure (voltage) and of quantity of flow (ampèrage). Let us call the voltage latitude of register.

Our vocal cords have a certain register for sound production, which register is of higher pitch in the female. Our ear has a register of about 7,000 notes in the organs of Corti, which vibrate in sympathy with the vibrations of the membrana tympani. Below or above these sound vibrations we cannot hear anything, because outside of our ear's register. There are many sounds in Nature inaudible to us because of either higher or lower pitch. The lowest note our ear can perceive is the sound of the sixteen foot organ pipe, but there is an organ pipe thirty-two feet long, which is inaudible if sounded alone, yet if sounded with the sixteen foot pipe the latter note is intensified because the latter's sound wave moves parallel with one half of the sound wave of the longer pipe. May we now, after this illustration, make comparison with electricity. If we use the ordinary induced current with a Leyden jar of large size, the spark produces a painful sting because it is within the nerve's register. Then let us drive this same induced current through a step up transformer until it moves beyond the nerve register, we can get a current pressure which is quite bearable. This current reaches an immense voltage (pressure), but the output of the machine being always the same, we get a quantity (ampèrage) of inverse ratio with the voltage.

CASE REPORTS.

Case I. Mr. A. J. P., aged fifty-nine years. Attorney. Given to alcoholic excesses. Liver enlarged, accumulation of large quantity of fluid in abdominal cavity from stasis in the portal vein. His physician in Yonkers tapped about three and one half gallons of fluid every twelve days. Uranalysis showed trace of albumin, a few granular casts and a few hyaline casts, otherwise normal. On October 2, 1911, patient was abstemious in alcoholic substances, emaciated, had yellowish sallow complexion. His voice sounded like that of a patient in last stage of phthisis, but percussion and auscultation did not disclose pulmonary lesions. He had pneumonia many years ago; no other disease. All told, he was tapped about seventeen times. The treatment instituted consisted of bitter tonics and high tension bipolar electricity. The intervals between tappings grew longer, and the quantity of fluid became smaller. In November he went to Florida, and then no more tapping was needed; his last tapping occurred November 5, 1911. He returned to New York in April, 1912, and intended to build up another fortune. He felt well and did the work of two persons in his office. He reported to me at short intervals, and I saw him last in the beginning of December, when he expressed the wish to be present at this meeting. At the end of December he contracted erysipelas and died December 30, 1912. Doctor Padgett, his physician, telephoned me that not a vestige of the hepatic trouble was observable.

Case II. Mrs. F., housewife, Italian, arrived in America in 1910. Her husband had preceded her. Subsequently her abdomen enlarged; pregnancy was suspected and ar-

rangements were made for such event; at last, no child was found, and she was taken to Coney Island Hospital (near her home). No relief followed. She drifted into many hands, among them those of Doctor Samarelli, who opened her abdomen, finding the internal genital organs in good order. She was tapped every seven to eight days, each time anywhere from sixteen to twenty-six pints of fluid being removed. The liver was reduced in size and could not be palpated even after removal of fluid from abdominal cavity. The accumulation of fluid was due to obstruction in the portal circulation. Uranalysis disclosed no pathological condition of kidneys. We gave her simple tonics and high tension electricity as in Case I. I saw her last in her illness on May 11th, since which time she has been well.

CASE III. Mr. F., aged seventeen years, student at City College. Nine years ago was operated on for sarcoma of the left ilium by Doctor Thorner. He subsequently came under our observation, and x ray treatment was given with the result of recovery in one and one half year. Last year (1912) in February a painful tumor appeared over the left lower ribs (a recurrence of sarcoma). On June 13th he came to us for treatment. It was found also that he had a lateral curvature of the spine with rotation and deep depression of anterior and posterior of chest. He was still under treatment. The tumor was now very small, and not very painful. He had x ray treatment combined with bipolar high tension high frequency current, giving him relief much sooner than when he had only x ray treatment with the previous attack. But now came another result, which was not expected nor sought: His spinal curvature was reduced and the depressions of the chest came out. It was unbelievable that the x rays were a factor in this result, and it appeared that the high tension electric fluid, passing through the subnormally nourished tissues, urged metabolism toward normal activity, and repair was inaugurated. This looked like a profitable field for investigation. Doctor Ruppe, this patient's physician, endorsed this result.

Years ago I was, perhaps, the first to learn that by the interposition of a number of spark gaps an x ray tube of low vacuum could be induced to act like a hard tube and attain more penetration. Then it seemed that a force moving at a great velocity (and high tension electricity does this) is difficult to divert from the direct line, and if this is a fact, such currents would surely act on internal organs on the line of the current. The interposition of multiple spark gaps in high tension high frequency will also (as in x ray pratice) induce penetration. Several manufacturers have apparatus that will demonstrate these facts.

Now, anyone of pessimistic inclination may say that these cases might have been cured under any or no treatment; such a statement might and does touch the border of medical nihilism, which is a convenient resort of all who combat progress or anything new and unknown to them. The cases (except that of Mr. F., the college student) presented were on the down grade, with very little hope for rescue. Mr. P. had given away all his property, because his physician, Doctor Benedict, of Yonkers, had told him that there was no help for him and that he could not live long, and the patient prepared himself, so to speak, for the undertaker, with a courage and defiance of death which was admired, and which may be admitted as a factor in his recovery.

It should be borne in mind that we cannot truly *cure* a sickness; *Nature* does this; but in a disorder she may need help, and we as physicians should perform the duty of furnishing the *right* kind of help, the help that Nature needs. It is for this reason that stencil treatment, routine medicine, medical hobby treatment is ineffiecient. Every case needs close study, and who can do this better than an all around physician?

High tension electricity has a field for remedial application, especially as we can apply it locally to a part of the body, even to internal parts, which cannot always be done by internal medication. Suppose we give opium for a pain; the drug will have to course through all the bloodvessels and spend much of its force before it reaches the seat of disorder, not to speak of its secondary effects like arrest of secretions, constipation, etc. But no one should take this comparison as an assertion that opium and electricity are interchangeable as remedies, for they are not interchangeable. Each has a field for application.

183 WEST EIGHTY-SEVENTH STREET.

WHAT THE PRACTITIONER SHOULD KNOW OF THE WASSERMANN REACTION.

BY GEORGE A. WYETH, M. D.,
New York.

It is sometimes urged that the Wassermann reaction is of little or doubtful value in determining the presence or absence of syphilis, and, in support of this opinion, attention is often called to the fact that from different laboratories may come contradictory reports on the same serum. The importance of this contention is more apparent than real, as the following paragraphs seek to show. And if some of the misconceptions regarding the Wassermann reaction can be cleared away this test will undoubtedly demonstrate its tremendous importance.

In the first place, it must be borne in mind that the Wassermann reaction is not a test for the presence or absence of the exciting cause of syphilis (*Spirochæta pallida*), but is a test for the *antibodies* of this cause. This is shown by the fact that the Wassermann reaction is seldom positive in a fresh case of syphilis until toward the end of the first month after infection, that is, until the antibodies have had time to form. Verification of the clinical diagnosis in the first few weeks, therefore, is better made by examining scrapings from the depths of the suspected lesion under dark field illumination for *Spirochæta pallida*. Mercury in any form should never be applied to a suspicious lesion until its exact nature is definitely determined, for though it generally heals the lesion, it masks the findings and often distorts the subsequent course of the disease. If *Spirochætæ pallidæ* are found in the chancre, the physician needs no further proof of the presence of syphilis, and should immediately institute the modern treatment of intravenous injections of neosalsarsan followed by mercury and *controlled* by the Wassermann reaction. In secondary, untreated tertiary, and florid hereditary syphilis and in paresis the percentage of positive reactions is very high, while in latent hereditary syphilis and in tabes dorsalis I have been unable to obtain a positive reaction from the blood in more than fifty per cent. of the cases. In treated tertiary cases the reaction varies

greatly, depending upon the amount of treatment previously administered, the date of the last treatment, etc. In syphilis of the cerebrospinal axis, and particularly in tabes dorsalis, the cerebrospinal fluid should be examined, for a positive Wassermann reaction may be present in this fluid even though absent from the blood. In either case it is entirely without the scope of the general practitioner to perform the Wassermann reaction himself. So delicate and difficult is the technic that it should be entrusted only to the trained laboratory worker whose previous experience enables him intelligently to interpret the result. On the other hand, it sometimes falls to the lot of the practitioner to collect the blood or the cerebrospinal fluid, and for this the following specific directions are given.

By way of preliminary precautions, bear in mind that a positive Wassermann reaction may occur in recent malaria, yaws, and leprosy; that alcohol taken in "considerable quantities" may mask an otherwise positive Wassermann reaction by rendering it negative (Craig and Nichols, *Journal of the American Medical Association,* August 5, 1911); and that *antisyphilitic therapy,* when given in sufficient doses, generally renders the reaction negative, so that it is well to suspend all treatment for from three to six weeks before having the reaction made.

To draw the blood, select a salient superficial vein, preferably at the bend of the elbow. Cleanse the skin and let it dry. Puncture the vein through the skin with a *dry,* sterile needle, discard the first few drops and half fill a *dry,* sterile test tube of medium size. Allow no water to enter the tube, as it may interfere with the reaction. Keep in a cool place and send to the laboratory at earliest convenience.

To draw the cerebrospinal fluid, tap the subarachnoid space in the interval between the fourth and fifth lumbar vertebræ. A line between the highest points of the iliac crests passes across the spinous process of the fourth lumbar vertebra. With the patient leaning forward to widen this interval, enter the needle one half inch below and to the outer side of this spinous process, and pass it forward and inward for a depth of about three and a half inches. Sudden loss of tissue resistance indicates entrance into the subarachnoid space, whence a few cubic centimetres may be withdrawn. It must be handled with the same precautions as the blood.

In explanation of the contradictory reports which are sometimes obtained from different laboratories, the following, "in words of one syllable," is offered. Modifications of the original Wassermann reaction, which sacrifice scientific exactness to shortening and cheapening the process, undoubtedly are responsible for much of the lack of confidence with which the test is regarded in certain quarters; and I believe the vast majority of positive results in nonsyphilitic cases is due to faulty technic.

The reaction as performed in Professor Wassermann's laboratory to-day required five reagents.

1. Serum of patient, heated at 56° C. for one half hour.

2. Antigen—extract of luetic liver now recognized as superior.

3. Amboceptor—serum of rabbit which has been immunized against sheep corpuscles.

4. Complement—fresh serum of guineapig, diluted one to ten in salt solution.

5. Washed blood cells of sheep—solution of one to twenty in salt solution.

If sheep's blood corpuscles, amboceptor, and complement are placed in a test tube, after a short time the corpuscles are destroyed and the fluid becomes perfectly clear. This is known as hemolysis. A positive syphilitic serum contains the antibodies of syphilis. A negative does not. It has been found that if a *definite quantity* of positive serum (antibodies), antigen, and complement is placed in the water bath for one half hour at 37° C., the complement becomes used up or fixed so that it no longer remains free. If the same is done with a negative serum (no antibodies) this phenomenon does not occur; the complement remains free. This constitutes the first step of the Wassermann reaction. Tubes are then removed from the water bath, and *definite quantities* of amboceptor and sheep's blood are added and the tubes again placed in the bath. After a short while, if complement has remained free, it acts with the amboceptor and destroys the blood corpuscles, the liquid clears, and hemolysis is said to have taken place—a negative reaction. If the complement has not remained free, but was used up in the first step, hemolysis does not occur; the liquid remains cloudy—a positive reaction. Differences in degrees of cloudiness are designated weak or strong positive. If the liquid does not completely clear it is spoken of as "doubtful." This, in a word, is the theory of the Wassermann reaction, and the best results are to be had only by precision of method with closest attention to details. This begins with the preparation of the apparatus to be used and the preparation and control of the reagents. Thus, all pipettes, test tubes, flasks, etc. should be thoroughly cleansed, dried, and sterilized. Of the five reagents, a definite amount of serum and standardized solutions of complement and of blood cells are employed. Complement must be fresh, and the complement bearing serum of one guineapig may be more active than that of another. The remaining two reagents, amboceptor and antigen, are variable factors and must be used accordingly. It must be remembered that the Wassermann reaction is a quantitative as well as a qualitative examination, and an antigen that is used in too large a dose will itself cause an inhibition of hemolysis (cloudiness), even as an antigen used in too small a dose shows hemolysis (clearing) with a syphilitic serum. The specific dose must, therefore, be repeatedly determined. Amboceptor and complement bear a reciprocal working relation, and this relation must be determined each time a Wassermann reaction is made, for here again an excessive or insufficient quantity of either produce contradictory results.

From this meagre description it is apparent how readily discrepancies in results may be obtained unless a prescribed, *thoroughly controlled* form of technic is followed. This Professor Wassermann anticipated and provided for, and I believe that deviations from his technic—"short cuts" which omit the proper test of reagents—have brought unwarranted criticism on the original reaction.

A doubtful or positive reaction in a patient who has received treatment should be considered an indication for further treatment, even though clinical

manifestations may have been absent for a considerable time. Nor should a negative reaction be valued as a cure unless it remains negative, with no clinical signs, for at least a year after discontinuance of treatment.

The treatment of syphilis is to-day no longer empirical, for along with modern methods of administration, we have a scientific and trustworthy means of regulating the treatment and controlling the disease, as well as a valuable aid in diagnosis. But in using this test its limitations must be borne in mind; nor should we forget that the question of proper control of the test at the time of making is equally as important as the result itself.

30 EAST FORTY-SECOND STREET.

PSYCHOGENIC PSYCHOSIS.*

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In our efforts to get a correct understanding of cases of mental disease,[1] we may consider each case from different viewpoints: First, the age at onset, as, in early life, characteristic of idiots, imbeciles, morons, constitutional inferiors, and psychopaths, etc.; or those at the other extreme of life, as the arteriosclerotic and senile disorders. Another group of mental disorders are understood by their relation to the neuroses or psychoneuroses, as epilepsy and hysteria. To the diagnosis of a third group we are led by the presence of coexisting neurological symptoms, as paralysis in the organic psychoses. Another group is characterized by fairly definite symptomatology and course, as manic depressive and paranoia, while a large group is characterized etiologically, as toxic, exhaustive, traumatic, psychogenic, etc.

In the last group I would draw attention to the psychogenic, or more accurately, *emotogenic* psychosis, cases of which have been catalogued under the diagnoses psychological depression, undifferentiated depression or excitement, acute confusional insanity, amentia, hysteria, psychopathy, criminal insanity, degenerative psychosis, prison psychosis, atypical precox, etc.

While under this etiological nosology, such headings as "prison psychosis," etc., may be useful as indicating the place of origin, we get a sufficiently accurate survey merely from a knowledge of the emotogenic factor.

ETIOLOGY: PREDISPOSITION AND EMOTION.

Predisposition is characterized by autochthonous mood changes or changeability, irritability, mental instability, fatiguableness, and intolerance to alcohol. In short, this form of psychosis develops frequently on a basis of high grade imbecility, constitutional inferiority or psychopathy, or more rarely may develop in supposedly normal persons under unpleasant external influences, as undesirable environment. This fact has been recognized by the laity in some cases and utilized by them in the explanation of practically all cases of mental disease. It is our duty as psychiatrists to recognize the kernel of truth in the layman's view and sharply delimit its application in the psychoses.

In *King John*, act III, scene 4, Shakespeare ascribes to Constance on her son losing the throne:

> I am not mad; I would to heaven I were;
> For then 'tis like I should forget myself:
> O, if I could, what grief should I forget!
> Preach some philosophy to make me mad,
> And thou shalt be canoniz'd, cardinal;
> For, being not mad, but sensible of grief,
> My reasonable part produces reason
> How I may be deliver'd of these woes,
> And teaches me to kill or hang myself:
> If I were mad, I should forget my son;
> Or madly think a babe of clouts were he;
> I am not mad; too well, too well I feel
> The different plague of each calamity.
> . . . . . .
> But now will canker sorrow eat my bud,
> And chase the native beauty from his cheek,
> . . . . . .

Exciting emotion; anxiety. It would facilitate our understanding of psychiatry if for every mental disorder there was present a characteristic brain pathology, macroscopic or microscopic, but while such definite lesions are present, for instance, in paresis, they are notable by their absence with many other psychoses, and so we look for other genetic factors. In this psychosis particularly we must in the anamnesis always look for the affective exciting or genetic factor prior to the onset of the symptoms, such affects usually being for a definite cause and of an anxious, worrying, or brooding type.

Certain unpleasant facts, concepts, or ideas relative to the individual's condition of existence or status in life and with great emotional value by a mental defensive mechanism, can and do produce an altered condition of consciousness, wherein ordinary stimuli are ruled out, to which consciousness is "not at home," so to speak, the attention being inwardly misdirected and sometimes concentrated on the usually subconscious phantasmagoria. The stern realities and unpleasantnesses of life have nothing to allure the mind back in such psychogenic psychoses. On the contrary, the painful emotional association present with full consciousness is repulsive and, as might be expected, the patient remains passively or semivoluntarily for a long time disoriented—the correct comprehension of the interrelations of things lost, in this way evading or not fully perceiving the real unpleasant facts. In mental diseases occurring at times of disheartening emotional stress the emotional state and psychotic symptoms are often the result of the unpleasant conditions. In the prison psychoses the influence of unpleasant environment favors mental disorder, as there is no way of evading the unpleasant reality by physical absence, but there is a mental or psychogenic reaction for so doing—a submersion of the ego to the subconscious. "Stone walls do not a prison make nor iron bars a cage."

On account of prison walls, the desirable actions cannot be consummated as in freedom, and psychomotor inhibitions occur unpleasantly often—a summation of stimuli with headache, frontal region, where cerebral inhibition is supposed to occur. Mental conflicts and tangles ensue, subsequently physical clashes. The individual reaction (be-

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*Read before the Society of Nervous and Mental Diseases, January 16, 1913.

[1]Disease meaning alteration from the normal in tissue or its function or in both combined. Whether we include psychogenic psychosis as a disease depends on whether we include function in the definition of disease.

havior) begins to assume a definite trend of symptoms.

The onset of a psychogenic psychosis in freedom is an expression of failure of adaptability to the environment or to *some new and difficult problem of the environment,* and I have in mind the case of a woman who reacted by a depression on its becoming necessary to move from one location to another. Also another woman in whom developed a depressed anxious state on her daughter marrying a man whom the mother thought undesirable. Both recovered after brief periods. The usual formula of onset is an unpleasant affect followed by brooding, worry, or anxiety and a functional derangement of the mental reactions or adjustments, unpleasant dreams, hallucinations, and subconsciousness.

In the psychogenic psychoses occurring during imprisonment, in jails, reformatories, houses of correction, and penitentiaries, the usual onset is in the twenties or early thirties in recidivists, a term in the United States signifying an habitual criminal (it is assumed that the habitual criminal implies predisposition) who has served or is serving a second term in prison. He may be in isolation or mass confinement under great emotional tension, brooding or worrying. It is probable that a feeling of disgust when long continued is superseded by a defense mechanism of indifference, as though the patient asks himself, "What's the use?" and as a sequel dullness of the emotional response often ensues. In other cases the symptoms are exaggerations of the underlying personal temperament.

Symptoms begin with perplexity, anorexia, headache, or migraine, oversensitiveness, insomnia often due to emotional or complex disturbance, depression, suspicion, anxiety, restlessness, irritability, violence, fear of bodily injury or the termination of the patient's existence (which implies there might be a reason why it should be terminated).

In the stream of thought there are manifested unpleasant dreams at night, day dreams, sensory illusions, delusions based on or associated with hallucinations, and elaboration of these delusions to relate them to the environment; thus an effort at reasoning in a vicious circle is made. The delusions and their elaboration are prejudicial, wildly fantastic, or grandiose. They often represent subjective wish fulfillments, as the frequent delusion of innocence, the conviction that pardon or discharge has been granted, the elaboration of the criminal act as the fulfillment of a religious or divine will. Paranoid reactions occur with delusions against the warden, physician, and officials of the department of justice, and assertions are made that they, not the patient, are the real criminals. Catatonic states are manifested by some with repression of unpleasant ideas or complexes and a restricted persecutory delusional formation. The seclusive patients may have well developed day dreams and fantasies, which are not always evidenced. All through the stream of thought there occur points of contact with the affecting realities of the environment.

The behavior is changeable, its changes depending on environmental influences, and the prejudices toward the personnel of the prison or hospital or law officials are evidences of the patient's feeling toward the environment and hence the violence displayed toward them.

Orientation. The condition of consciousness shows impairment or disturbance such as clouding, hysteroid, twilight states, Ganser stupor, catatonic-like constraint, mutism, or negativism.

Intelligence defect is slight. Judgment and insight are impaired; the latter sometimes occurs, but not in all cases, the defect being manifested chiefly in the failure of insight into the erroneous ideas against those in personal charge of the patient. In a number antisocial prejudices become firm convictions.

Memory is good for incidents favorable to the patient and often errs by fabricating justifying circumstances. Mild impairment may be present, especially temporary or permanent haziness or amnesia for the unpleasant facts, as the crime, trial, and sentence—the result of a repressive mechanism. Paramnesia, consisting in peculiar, free fantasies or fabrications of a wish fulfilling character tend to square the patient with himself.

VARIETIES OF REACTIONS.

Some of the varieties of psychogenic reactions might be enumerated:

First, psychogenic depressions or excitements, often not recognized as such on account of the inadequate anamneses and the tendency on the part of the patient to repress the exciting factor from memory.

Second, acute hallucinatory melancholia (of Kirn).

Third, prison psychotic states with simulated symptoms (Siefert).

Fourth, precoxoid forms as (a) stuporous types with mutism or (b) excitements with fear occurring in mass imprisonment (Siefert).

Fifth, acute paranoid type with isolated hallucinations, irritability, depression, ideas of reference, and elaborations of day dreams of being abused. This occurs mostly in young criminals (Siefert).

Sixth, chronic paranoid degenerative types with hallucinations and frequent litigious propensities (Siefert).

Seventh, hysterial or hysteriform degenerative states with tantrums, convulsions, delirious confusional states, and Ganser twilight state (Siefert).

Eighth, pseudologia fantastica, fantastic degenerative forms, resembling some types of psychopathy in which endogenous mood fluctuations, autosuggestibility, lying, swindling, increased imaginative faculties, systematized delusions, or delirious states occur (Siefert).

Ninth, dementialike states after prolonged imprisonment for many years, manifested by refusal of the usual routine, capriciousness, and a stereotyped insistence on discharge (Siefert).

That these chronic states are based on emotion (e-motion, implying a tendency to motion in a certain direction, which is pleasant or away from what is painful or unpleasant—"the moving spirit") is attested by the lifelong convictions on political, religious, and many other activities, which depend on their emotional value for their consummation.

DIAGNOSIS.

The psychogenic psychoses are differentiated from others by the presence of an adequate affect-

ing cause, by the fact that the environment frequently contains the cause and does not merely afford a background for the staging of the psychosis, as in other forms. In the stream of thought are found absurd interpretations of hypochondriacal sensations, physical explanatory deliria, self accusations and self mutilation, suicide being considered a way out of the difficulty. In the prison psychosis the associations of grandiose and persecutory ideas are frequent, the delusions being projected on the environment, but as a rule limited and not including fellow prisoners. Neologisms which develop are considered as characteristic abbreviations or transpositions of words relating to the emotional disturbance. It is probable that there is only little, if any actual organic change. In its relation to the other psychoses it finds a place closely related in its genesis to hysteria. Some of its symptoms resemble those present in constitutional inferiority and dementia præcox. In the latter the etiology is less definitely related to one affective event, but instead there is often found a long continued series of unpleasant and unsuccessful efforts at adaptation to the environment. In manic depressive, there is less causal relation found; the manic episode often has its onset under practically the same circumstances as its cure. These circumstances are frequently in the hospital for insane. It seems probable that with fuller anamneses a number of cases considered to be manic depressive would be found more closely related to psychogenic. The depression of involution can only rarely be mistaken on account of the circumstances attending its onset, the age, sex, etc.

The *course* is irregular, the duration varying from days, weeks, or months in the acute cases, to years or decades in the chronic cases. Speculating on the reasons why psychogenic disorders recover, while cases of dementia præcox containing many psychogenic symptoms fail to get well, it would seem that in the psychogenic cases recovery ensues more readily with change to a better environment, that is, the defense mechanism of the psychosis is no longer necessary. In the precox the individual make-up and recuperative power seem much more affected. It does not serve toward progress in the elucidation of the problem by citing or adding other unknown factors, as is done by inventing poisons or toxines in that disease to account for the chronicity, although it is understood that with emotive changes such as are present in precox, evidenced as symptoms of the emotional complex, there occur with these emotions at least quantitative changes in the secretions as excessive lacrymation with crying and other secretory and excretory disturbances attest. In conjunction with this, concerning precox the more numerous points of emotional conflict in the environment may prove to be factors which repel recovery.

If we may consider the psychosis as a protective reaction, the function of which is to spare the patient's feelings, we can readily see that the outlook for a prolonged course is greater where environmental conditions are unfavorable and tend to remain so. We may ask what has the environment to offer which would allure the patient's mind toward recovery of its normal function. When improvement occurs transiently, sufficiently long for the patient again to realize his unpleasant situation, the solace of the psychosis is again resorted to, thus presenting a remittent or intermittent type and in a measure enabling us to comprehend the intermittent autochthonous mood changes.

TREATMENT.

This requires the gentle assistance and direction of a thoughtful and more resourceful mind than that of the patient. The assistance of one who has ability to avoid or minimize the unsettling action of the ordinary shocks in every day life, especially those which relate to unpleasant emotional memories. The mode of life of those susceptible cases must be regulated; at least with proper advice the psychotic sequel may be avoided by eliminating the exciting, usually unpleasant factor. If the onset is in prison, isolation and solitary confinement should be minimized. Instead, such cases requiring isolation should be under observation in the psychopathic ward, which should be in every prison. Isolation continued for long periods with the resultant development of brooding, illusions, terrifying hallucinations, and unpleasant delusions, approaches closely to the "cruel and unusual punishment" forbidden by the Constitution. Like other diseases, if the cause is removed, cure will follow, and since it may be inexpedient to remove an unpleasant environment, we may obtain the same result by removing the patient therefrom. If the individual is still amenable to religious influence, have him daily emphasize that passage in the Lord's prayer which says, "Lead us not into temptation, but deliver us from evil." The accurate regulation of the patient's actions by the training to habits of correct behavior will prove the most effective psychotherapy and prophylaxis.

Following is a case illustrative of the acute hallucinatory type:

CASE. G. W., aged thirty-one years, general court martial prisoner.

Family history.—In the ancestry it was noted the father died at the age of thirty-five years of alcoholism following business reverses. Mother was of a very nervous disposition and worried a great deal. Patient's brother was a nomad, chronic alcoholic, and ne'er-do-well. It was natural, therefore, to expect a predisposition to nervous or mental disease in the patient.

Personal history.—In his early life he acquired a common school education and won prizes for his school work. Had malaria at eighteen, gonorrhea at twenty-four, and appendicitis at twenty-five years. Habits regarding alcohol were temperate. Became interested in physics, particularly electricity, and studied kindred subjects which might be useful. For a time he worked at various occupations, had a roving disposition, and finally enlisted in the navy as electrician. He received an honorable discharge at the end of enlistment and reenlisted, became well qualified for his work, and an instructor. (The foregoing is to show the patient's status at his best.) He continued to study subjects which would result in his promotion and worked hard, as it was necessary that he assist in the care of his mother, and considered the possibility of establishing a home for himself and his intended wife. He had had an excellent record in the navy, was intrusted with the confidence of his officers; up to this time he had performed his duty and there was no question of his sanity. As an illustration of the extreme to which he went in keeping a promise of writing a monthly letter to a friend in one of the Island possessions,—he, on failing to do so, sent a cablegram instead, containing only the usual greetings, which cost him over $7. He promised friends Christmas presents from foreign countries where his ship touched and finding he had insufficient money to purchase presents, committed thefts in order to keep his promises.

Suspicion pointed toward him and investigation was made, resulting in his detention and court martial the following February.

Etiology.—On being arrested and having time for reflection his broodings while under arrest were, first, the peculiar and unusual condition in which he, as a chief petty officer, found himself—in irons; second, he was a disgrace to the service, his friends, and himself, had lost the confidence of the officers and disgraced the uniform—acted a fool; third, what would the sentence be—if found guilty of theft on each of the four specifications he would be reduced to the lowest rating, be imprisoned for four years at hard labor, and then dishonorably discharged; fourth, as he was the mainstay of the family, what would his mother, whom he had been supporting, do; fifth, what would his fiancee think?

Onset.—He became disgusted and didn't care whether they took him out and shot him. Anorexia developed—he tried to eat but couldn't; his "whole insides" felt nervous. It occurred to his mind that they were going to operate on him. His mind was confused and seemed in a kind of haze prior to the court martial. Later, while in the prison ship, malingering was considered by the physicians, also the possibility of the case being one of dementia præcox. Examination there showed him to be disoriented for place. He had transitory auditory hallucinations and unpleasant sensory illusions. Attention was diminished; thought retarded and markedly incoherent. Emotional blunting and indifference to his surroundings were present. He was very suspicious and distrustful of all about him; had a furtive, hunted manner and placed himself against the wall to avoid persons passing behind him. Physically, well nourished; heart rate increased to 86 a minute; no anesthesia or other abnormalities.

On admission to the Government Hospital for the Insane, he was afraid, restless, and allowed no one to pass behind him. Was well oriented for time, place, and persons. Stream of thought: He denied auditory, visual, or other hallucinations. He had difficulty in remembering dates and events, and at such times considered he had to bring up all the associations in order to get to the point. Emotionally, there was some depression and worry; he became easily lacrymose when questioned on the thefts. When informed, by the physician, of his four year sentence, he failed to display a proper emotional reaction and the emotional dulling was also evidenced when informed that his sentence had been remitted. As far as he was concerned, it made no difference whether he was kept here all his life. His apparent indifference continued after his transfer to the Government Hospital for the Insane. Ethical questions were answered well: To lie he considered worse than to steal on account of the greater trouble liable to ensue. Attention to events in his environment was fairly good; a given address was remembered approximately after eight minutes. He knew about current events, as the Mexican trouble, the work on the Panama Canal, and other public enterprises. Retention as of a short story was inaccurate. Memory of historical events learned in school was accurate, also of remote events as judged by his answers to questions on family and personal history.

Recent memory was good up to the time of the court martial, when it became hazy. He had amnesia regarding his trial, did not know what the charges against him were, what his sentence was, or whether he was sentenced. Amnesia was present for a few days after the trial. Inquired whether he had committed any serious offence since being transferred to the prison ship; of the court martial remembered only being before some officers, but was unable to say who they were or what they were talking about. It seemed one of them said patient had been talking to himself. He had felt unable to say what he wanted; his brain seemed slow and dull, though formerly active. He admitted trying to forget all the unpleasant "stuff," miscalled the name of the prison ship, and could not remember what happened other than having been worried and excited and unable to answer questions. He was unable to remember events occurring just prior to his coming to this hospital. Intelligence was commensurate with his education; he was able to describe the differences between certain animals and substances—water was H_2O in liquid form, ice was H_2O in solid form, caused by difference in temperature. He was able to incorporate given words in sentences. The meaning of proverbs was understood by him. Ordinary arithmetical calculations, including mensuration, were well done, and the inventors of gun powder, telescopes, steam engines, steamboats, cable, and telephone were given correctly.

After admission he had visual hallucinations, as of unfamiliar faces in corners or against the wall, animals as prehistoric mammoths and lizards, and again he seemed in a big shop and saw and heard pieces of machinery, as well as men who seemed to be talking. He did not believe anything he was told, for instance regarding his sentence and its having been remitted. If he had found he had a long sentence, he would have felt worse. It is probable that his apparent indifference resulted from a tendency to repression of the unpleasant circumstances. He did not remember how he came here nor who came with him. He was skeptical about believing things, as aviation meetings, etc., scheduled in the paper to occur. It seemed that his whole life was a delusion to him.

His plans for the future were to find work at his trade. When he found himself worrying he started to exercise or play games in order to occupy his mind, and gained better control of his mind. He increased nine pounds in weight and was discharged, recovered, after about four months.

It seems evident that since physical means could not be consummated to avoid the unpleasant situation by personal absence, he took refuge in a defective condition of consciousness—a confusional state with disorientation and incoherence, where the unpleasantnesses of real life were repressed from clear consciousness and replaced by hallucinations and transitory delusions bearing some relation to his former work. In this way his reaction is to a fairly definite etiology with characteristic symptoms, short course, and termination, ending in recovery conditioned by his removal from the causal environment.

The function of the psychosis, like the function of a dream, served to protect him from a painful reality by substituting a mental state (which seems from an observer's viewpoint less desirable) such as Shakespeare, the master delineator of the human emotions, would consider Constance to desire in her difficulty.

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EYE STRAIN SYMPTOMS IN GENERAL PRACTICE.*

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The term, eye strain, is generally accepted to mean that varied and complex group of symptoms of malfunction resulting from errors of refraction and imbalance of ocular muscles. I wish to bring to your attention the reasons for eye strain, its indirect effect upon the function of other organs of the body, and its symptomatology.

Light is a form of energy considered as a phenomenon of wave motion, and revealed to us by its stimulation of the retina and the resulting sensation of vision. The smallest conceivable portion of light is called a ray. In nature all rays of light are given forth from a definite source, proceed in

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all directions, and are primarily divergent. This divergence of light rays is so slight after traversing twenty feet that the rays are then nearly parallel, and for practical purposes we consider all rays from a source more than twenty feet away as parallel, and rays from an object nearer than twenty feet as divergent.

The combined convexity of the cornea and crystalline lens in the normal eye converges parallel rays of light to focus on the retina and so make distant vision distinct by producing a clear retinal image. Divergent rays, proceeding from a near object, are focused behind the retina of the normal resting eye, producing on the retina circles of diffusion instead of a clearly defined image. Here the focal point is brought forward to the retina by increasing the convexity of the crystalline lens, which process we call accommodation, and which is attained by the action of the ciliary muscle on the suspensory ligament of the lens and the elasticity of the lens itself.

In the hyperopic or far sighted eye, all natural rays are focused behind the retina, and this eye cannot see distinctly at any distance without using accommodation, and must accommodate still more for near objects. Hence, in the hyeropic eye the ciliary muscle is in practically constant contraction during waking hours.

The myopic eye is called near sighted, and cannot physiologically see any distant object clearly because parallel rays are focused in front of the retina and accommodative effort always brings forward the focal point, and cannot throw it backward. Proportionately less accommodation is required for near objects in myopia than in hyperopia, but, practically, many myopes hold close work nearer to the eyes than necessary for clear vision, and thus needlessly overwork the ciliary muscles.

Astigmatism is due to irregular curvature of the refractive media, chiefly the cornea. A large majority of patients have more or less astigmatism, and it is probably the greatest source of eye strain with which we have to deal. When astigmatism is present, rays of light do not focus in a point, but in a line, so that a round dot appears to be more or less oval. The diffusion circles thus produced are irregular in shape and extremely irritating to the retina itself, and also to the cerebral centres that endeavor to decipher the retinal impressions into what we call vision. The ciliary muscle probably tries by irregular contractions to make the retinal image more distinct, but in doing so is increasing its own fatigue, and when it fails the retinal irritation persists. The extrinsic muscles are also called upon to rotate the eyeball to bring the principal meridians of curvature into a position better adapted to clearer vision. Astigmatism is also a cause of head tilting for the same reason, and, according to Gould, it is in turn followed by a compensatory lateral curvature of the spine and in some cases by spasmodic torticollis.

In high errors of refraction the ciliary muscle soon tires of trying to overcome the defect, and the blurred images of irregular diffusion remain to irritate the retina. Low hyperopic errors are easily overcome by ciliary action, and in such cases the constant stimulation to see better, results in either muscular fatigue or hypertrophy, or both. Consequently, low errors are often more productive of malfunction than high ones, and because a patient can read 20/15 does not mean that he is therefore not suffering from eye strain. Since the myope cannot improve vision by ciliary effort, he receives on the retina the full effect of the irregular diffusion produced by whatever amount of astigmatism he may have. Because of the degree of irritation thus encountered, Gould believes low myopic astigmatism to be the greatest source of nervous disorder met in eye strain.

The effort to maintain binocular vision, in spite of differences in strength of the six muscles that together so balance each eye that images fall on corresponding retinal areas, frequently sends excessive nerve force to the weak muscles to equal the work done by the stronger ones. We recognize a fairly definite relation between convergence and accommodation, namely, a certain amount of accommodation excites a certain amount of convergence. A hyperope, therefore, who uses excessive accommodation for reading, also exercises more convergence than necessary, resulting in hypertrophy of the internal recti muscles at the expense of the external. And in myopia, proportionately less accommodation being needed for reading, we find a weak power of convergence and often a marked divergence. Yet our sense of fusion requires these weaker muscles to keep pace with the stronger in maintaining the single image.

It becomes evident, therefore, that the reasons for eye strain are hypertrophy, fatigue, and congestion of the ciliary muscles in their constant effort to produce clear vision; retinal irritation from circles of diffusion, made worse by irregularity in the presence of astigmatism; and extrinsic muscular hypertrophy and fatigue in the struggle to maintain binocular vision by proper balancing of the ocular muscles.

The indirect effect of eye strain upon the function of other organs of the body can best be suggested by a glance at the nerve elements involved in our ocular mechanism.

The retina in embryo is brain tissue—that is, the brain comes out to see. It is later so highly sensitized that it transmits by the optic nerve to the visual centres for interpretation the exact impressions made upon it through the refractive media of the eye. Hence, an irregularly diffused image on the retina is not simply a source of irritation to the retina itself, but is at the same time a direct irritant and cause of cerebral fatigue and, therefore, a hindrance to the function of the entire brain. Four of the twelve pairs of cranial nerves are devoted exclusively to ocular function. The third, fourth, and sixth pairs—joined by connecting branches from the sympathetic system—supply the extrinsic muscles. The ciliary muscle and iris are supplied by the short ciliary nerves from the lenticular ganglion, which has three roots—motor, sensory, and sympathetic.

For a muscle to do enough work to become hypertrophied or fatigued, requires an abnormal amount of motor nerve supply. Those people who have a superabundance of nerve force do not feel any effects from this kind of expenditure of energy; while in individuals endowed with only a limited amount of nerve force, an extravagance on

the part of one organ means a lack of normal supply to, and consequent malfunction of some other organ. The fact that one fourth of all the cranial nerves are required to supply eye muscles shows both how much motor nerve energy is needed for normal ocular function, and also how great is the opportunity for a waste of nerve force when these muscles are overworked.

Retinal irritation from irregular diffusion and congestion of the ocular muscles are transmitted as sensations of pain by the trifacial nerve, and cause much headache. Doubtless most of us have experienced severe supraorbital pain on drinking ice water or eating ice cream too rapidly. This is simply an every day reflex similar to that which occurs from irritation of the sympathetic system in eye strain and the pain referred to some other part of the body.

Muscular fatigue results in variable distinctness of vision, which is blurred one minute and clear the next. The effort to supply power to the nerves of the tired ocular muscles is often productive of twitching of the eyelids and of the facial muscles, as seen in the various habit spasms. Some of the local symptoms of eye strain mentioned by Alger (1) are: "Screwing of the lids in myopia and astigmatism, . . . the elevation or depression of an eyebrow, . . . abnormal wrinkles, . . . constant blinking of the lids, . . . tilting of the head. . . . many chronic inflammatory conditions of lids and conjunctiva," enlarged pupils, and photophobia. The effects of eye strain are so varied that, while some patients show local inflammatory conditions and apparently no reflex irritation, others will appear to have no ocular abnormality, but present reflex disturbances which, by the process of exclusion of other organs and by the correction of the refractive error, may be classed as due to ocular difficulty.

Without attempting a differential diagnosis of the causes of headaches, my experience agrees with the quoted statement (2), "an ocular cause may be suspected in all headaches which occur regularly and get worse in the afternoon, which are increased by close work and relieved by rest and on holidays, or which occur only during certain occupations, like the theatre headache or that which comes from travelling on cars or sight seeing."

Many of the symptoms of fatigue, irritability, and nervousness that women suffer during the menopause are often really due to the sudden onset of presbyopia, and may be relieved by proper glasses.

Functional disease of the digestive tract, associated with long hours of close application and continuous nervous tension, and cases of diziness, nausea, vomiting, and so called bilious attacks are certainly often due to eye strain, as evidenced by the relief which glasses give.

Some cases of migraine, chorea, epilepsy, neurasthenia, and psychasthenia—all of which are due, at least in part, to an underlying nervous instability and some disorder of brain function—are often benefited by removing whatever irritation may be present from eye strain.

Not a few people, including some physicians, consider glasses a sign of deterioration, and express regret when a person feels the necessity of seeking ocular aid. Glasses are really a labor saving device to prevent or offset the disastrous results of eye strain.

Refraction is a scientific art and not an exact science. To obtain the best possible functional results, the hyperopic, myopic, or astigmatic errors should be estimated as closely as possible. Astigmatism, the most difficult part of refraction, should receive special attention, both in amount and axis of curvature. The axis of the cylinder used to correct astigmatism can in most cases be found within five degrees, and in some cases within one degree. When the axis is not closely located, either the diffusion circles are made more irregular than in the naked eye or the muscular fatigue is shifted from one point to another, since the extrinsic muscles try to rotate the eye to meet the axis given. All this requires training, care, patience, and consequent skill. Because a man owns a case of trial lenses and has had a course in some postgraduate school does not mean that he, therefore, knows how to "refract" to the best advantage of the patient. Refractionists who deny that they see results as herein suggested need a change in their refractive technic.

Lens grinding is an exact science, and the time will come when the profession will be as zealous for accuracy in optical production as we are becoming for purity in drugs. I made a contribution on this subject two years ago (3), and have at hand material, as yet unpublished, that will show that about fifty per cent. of oculists' prescriptions are not accurately filled. This percentage of error is absolutely unnecessary and can be practically removed by special effort on the part of the individual oculist in checking up the work sent out by the optician. The care in fitting the glasses to the patient, the efforts of the patient to keep them properly adjusted, and the modification of lenses to meet changes in refractive error as they occur, are equally important factors in the excellence of the results obtained. The power of suggestion probably plays a part with some patients in the benefit derived from glasses, but neither this nor a lack of sensitiveness on the part of the patient should ever be used as excuse for careless work.

Many men, both specialists and general practitioners, often forget, first, that putting out the fire does not rebuild the house, and that time and reconstruction are necessary to repair the damage done before the source of irritation is removed; second, that the house cannot be rebuilt as long as a smouldering persists in either attic or cellar. This latter dictum applies when one or two sources of trouble have been corrected, and another, perhaps remote, but possibly even more important disorder has been neglected. For example, in the past year and a half I have had three patients, similar in that each had gastroptosis and also eye strain. A proper abdominal belt and carefully fitted glasses relieved each of them of their symptoms, which the belt did not do and glasses alone would not have done. We are all familiar with conditions equally dependent upon the function of eyes, ears, nose, and throat, in which the care of one with the neglect of another is of only partial benefit to the patient.

When symptoms of malfunction of one organ or

system persist after treatment of all obvious disorders, we have no right to lay it to nervousness or idiosyncrasy, or even call the condition obscure until the function of every other organ has been carefully tested and corrected. The constant use of the eyes during waking hours and the demand for, and frequently great waste of nerve force in their use, call for a careful ocular correction in all cases of any functional disorder possibly due to some reflex irritation or leakage of nerve force.

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105 WEST FORTIETH STREET.

INDICATIONS FOR OPERATION ON THE INFERIOR AND MIDDLE TURBINATES AND SEPTUM.

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Since rhinology has changed from a specialty of sprays and local applications into one of distinct surgery, it has become of great importance to the general practitioner to know when and how to operate. Patients who are sufferers from nasal trouble frequently consult their physicians as to the necessity of an operation, and if so advised, are anxious to know the kind of operation required.

A discussion of the general principles underlying it would therefore not be amiss, as even specialists do not always agree, and very often perform an extensive operation on the septum, where a small one on the turbinate would answer the purpose. There is no question that hundreds of turbinates have been removed and septa straightened that were entirely innocent, yet on the whole, the majority of cases need some sort of operative interference. If the physician but understood the principles, he could more intelligently advise the patient and agree with the specialist on the operation to be performed, and thus save a great deal of criticism.

There are two main indications for any operative interference on the turbinates and septum: 1. Nasal obstruction; 2, pressure of the turbinates on the septum and vice versa, giving rise to reflex symptoms. The first effect of nasal obstruction is mouth breathing with all its accompanying results; it need not even be absolute, for any slight obstruction may cause mouth breathing during sleep, because the effort is lacking to breathe through the nose.

It is surprising what a small space is necessary to enable one to breathe through the nose in the daytime, for many a patient whose nose was almost completely obstructed, was still able to breathe through it. That is why patients who breathe with their mouths closed during the day and open them from time to time only when there is not enough air coming through the nose, breathe with their mouths wide open when asleep, for they then lack the effort to keep it open; besides, the reclining position adds to the obstruction through the force of gravity.

The functions of the nose are to purify, moisten, and warm the inhaled air, but in mouth breathing the pharynx has to take its place, and not only does it improperly, but it also suffers by it, as by moistening the air it becomes dry.

Many patients are unaware that they are mouth breathers, and an easy way to elicit this information is to ask them if they feel dry on awakening.

Obstruction of the nose not only induces mouth breathing, but also catarrhal symptoms. This has been explained by Smith and others in the following way: Even normally the descent of the diaphragm during respiration causes negative pressure in the larynx and trachea. This is increased to a large extent by any obstruction in the nose and gives rise to congestion and excessive secretions.

Although the evil of mouth breathing is appreciated, it is the dropping, hawking, and choking that send the patient to his physician. All these symptoms are due to the catarrhal condition of the nose caused by the obstruction. Normally, the secretion in the nose is thin and serous and is usually absorbed, but in case of an obstruction, the discharge becomes excessive, thicker, and mucous or mucopurulent. Beside this, the obstruction causes retention of the secretions which become pasty in consistence.

Some patients complain of "dropping," especially when the posterior ends of the inferior tubinates are hypertrophied; it simply means that they feel the secretion, which has become excessive, coming down into the nasopharynx. In some cases, when it becomes pasty, the discharge sticks to the nasopharynx, hence the efforts of the patients to dislodge it from their throats. Sometimes their efforts are so violent, especially in the morning, that they are accompanied by vomiting. Choking is due to excessive secretion of mucus in the endoarytenoid space of the larynx due to the negative pressure induced by the obstruction in the nose. This state is generally evident in nervous patients, owing to their extreme sensitiveness, and many a case diagnosticated as globus hystericus, may be relieved by local treatment of the nose and throat.

The second indication, that of pressure, while not as frequently met with, is still of great importance. It gives rise to irritation which usually results in a catarrhal condition. Pressure of the septum on the middle turbinate causes a feeling of stuffiness and pressure in the nose. It may give rise to headache and such reflex symptoms as paroxysmal sneezing, neuralgia, etc.

SPECIAL INDICATION FOR THE REMOVAL OF THE INFERIOR TURBINATE:

This removal may be partial or turbinotomy, complete or turbinectomy.

1. When the bone is exceptionally large, even when the mucous membrane covering it is perfectly normal, a tubinotomy is indicated.

2. When the anterior end is hypertrophied, it is important to remove it, as it not only obstructs the air currents, and the smallest hypertrophy is sufficient to do this when situated anteriorly, but it may be sucked in during inspiration, against the septum, and completely close up the nose.

3. Hypertrophy of the posterior end causes accumulation of secretion in the nose, and if large may fill up the choanæ, producing complete obstruction, and causing a great deal of dropping. This can easily be diagnosticated, if on examination mucus is found on the floor of the nose.

4. When the lower border is hypertrophied and causes obstruction, or when it touches the floor.

5. When the inferior turbinate touches the septum and the septum is normal.

Turbinectomy is indicated in cases of malignancy, tuberculosis, or in a very narrow nose, where only complete removal will give relief.

Turbinotomy is to be preferred to turbinectomy, as there is always a chance for regeneration of the mucous membrane in the former.

The accusation that this operation produces a dry nose is not well founded, for, except in those having a tendency to rhinitis sicca, the dryness is but temporary. In cases of turbinectomy, the dryness cannot be helped, but when indicated it is the lesser evil, for it still can be relieved. In partial removal, permanent dryness should not exist, as there is generally a regeneration of the mucous membrane.

The many cases of rhinitis sicca that one sees after a turbinotomy are due to incomplete operation. I have seen such cases, where pieces of turbinates were left hanging after having been partially cut with the scissors; again when the obstruction was left posteriorly, and the secretion still retained in the nose became inspissated and when blown out forcibly had the shape of the posterior portion of the turbinate left.

SPECIAL INDICATIONS FOR REMOVAL OF THE MIDDLE TURBINATE:

1. When the anterior third is either hypertrophied or hyperplastic.

2. When the middle turbinate bone is enlarged, due either to cyst formation or to its being the seat of a cell or cells. When the bone is enlarged through the above mentioned causes, the walls may be extremely thin. I have removed the middle turbinate in a case where it was enormously enlarged, yet on cutting into it, I found the walls exceptionally thin.

3. When the posterior end is hypertrophied.

4. In cases where the enlarged middle turbinate causes pressure, giving rise to headache. The following case will illustrate:

CASE I. Mrs. S., aged twenty-five years, was referred to me by Doctor Buch. Patient complained of severe headaches, almost unbearable. A submucous resection had been performed, without any effect. On examination I found an enormously enlarged middle turbinate. A turbinectomy was suggested, to which she readily consented, although she had already undergone an extensive operation without any amelioration of her symptoms. After the middle turbinate, which was found cystic, was removed, her headache disappeared as if by magic.

5. In cases of paroxysmal sneezing, where the removal of the middle turbinate is followed by the most marvelous results.

These cases resemble hay fever, but they are not so severe, and may come on any time of the year. Every physician knows such patients, who at the slightest exposure or change of weather, are subject to sneezing, running, and obstruction of the nose.

The best palliative treatment in these cases is a spray of one to 5,000 of chromic acid, but as this destroys the sense of smell, it can be recommended only in those cases where it is already lost.

Turbinotomy, when the middle turbinates are enlarged, is the best treatment. Even the hay fever cases are very much relieved by the removal of the polypoid hypertrophy of the middle turbinate. Sometimes the relief is immediate, but usually it follows a few days later. On the other hand, an inferior turbinotomy is without effect. The following case will illustrate the effect of turbinotomy in paroxysmal sneezing:

CASE II. Miss K., aged twenty years, referred by Dr. S. R., had been suffering from attacks of paroxysmal sneezing since childhood, but otherwise enjoyed perfect health. On examination I found her middle turbinate slightly enlarged. The anterior ends were removed, and the patient has been perfectly well ever since.

6. In cases of eye strain, accompanied by headache, when the correction of the refractive error does not relieve, the middle turbinate if enlarged, should be removed, and usually the eye strain and headache disappear.

7. In asthma, when other causes, such as kidney disease, etc., are excluded, and the middle turbinate is enlarged, there is a distinct indication for its removal, for it may cure the patient, and will certainly relieve him somewhat by allowing him to breathe more freely through his nose.

I have personally seen two cases of absolute cure. One in a woman upon whom I operated ten years ago, the other, a furrier. Both had a turbinotomy performed and have been well ever since. Both cases were even relieved by the mere application of cocaine hydrochloride and epinephrin which showed them to be true cases of nasal asthma.

8. The middle turbinate is also removed as a first step in the operation on the ethmoid, sphenoid, and frontal sinus. When a patient is subject to frequent attacks of acute sinusitis of the frontal or the ethmoid bone, the removal of an enlarged middle turbinate by securing drainage will prevent it from becoming chronic.

Above all, a turbinectomy is indicated when the enlarged middle turbinate causes obstruction of breathing, and as it is in the way of the main current of air, it is more liable to do so than the inferior turbinate.

INDICATION FOR OPERATION ON THE SEPTUM:

The operations are either to correct a deflection or to remove a spur. Now, not every deflection should be corrected, nor should every spur be removed, for many deflections or spurs do not cause any symptoms whatsoever.

Before deciding to remove a spur, one should take into consideration its size, situation, whether it touches the turbinates, and the condition of the nose.

A small spur situated posteriorly may be left alone, as it will not obstruct breathing very much, for the air can still pass through above and below the spur; while the same spur anteriorly causes considerable obstruction and should be removed. A large spur, on the other hand, will obstruct breathing, whatever its situation. Again, a spur that could be left alone in a normal nose, would have to be removed in one filled with mucopurulent secretion, as otherwise thorough drainage is prevented. When a deflection or spur touches any of the tur-

binates, an irritation is produced, giving rise to catarrhal symptoms.

It requires a great deal of thought and consideration to decide whether to operate on the septum or on the turbinates. Yet, it only too often happens that a submucous operation is performed on a patient, when a small one on the turbinates would have answered the purpose, or what is still worse, no relief follows the extensive operation and a turbinotomy has to be performed after all.

In one of the cases, cited above, a submucous resection was performed instead of a turbinotomy, which would have relieved the headaches at once. On the other hand, I remember two patients who came to me with a history of having had the turbinates operated on several times without any relief, still complaining of obstruction and excessive secretion. After performing submucous resection, I was pleasantly surprised to find that the mucopurulent secretion had gradually disappeared and the inferior turbinates ceased to be congested and swollen. If a patient comes to us complaining of obstruction, and we find on examination that there is both a deflection of the septum and a swollen turbinate, if he gives us a history of short duration, it can hardly be due to the deflection which has probably existed since childhood, unless there is a history of recent traumatism. Again, if the obstruction is also on the concave side of the septum, or if it is alternating, there can be no question of the septum being at fault.

In conclusion, I would say that the septum should be left alone, unless there is a distinct indication for interference. This may be one of the following: To relieve obstruction in breathing; to secure drainage; to correct faulty speech, due to septile deformity; to enable us to introduce instruments for the treatment of catarrhal conditions of the ear. The literature on the subject being too voluminous, the mentioning of references has been purposely omitted.

1855 Seventh Avenue.

HOSPITAL PROPHYLAXIS.*

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The title of this article might otherwise be expressed as the principles of preventive medicine in institution management. A hospital has always been thought of as a stopping place that deals with serious bodily troubles. To the lay mind, especially to the uneducated, it brings up the odor of iodoform and visions of operations alone. A well appointed hospital of to-day need not and should not be repulsive; it should be found to be a quiet and clean institution especially equipped for handling various phases of disease, with trained personal attendants and visiting expert consultants; more than this, it must be the exponent of the most advanced medical thought pertaining to all bodily states.

To-day we hear much of prophylaxis, preventive medicine, immunity, hygiene, demography. These subjects have in the past been medical school and laboratory studies. They are now and must of necessity be practical every day matters for our attention and they are used and exemplified extensively in hospital practice. So we may consider prophylaxis in hospitals in its many phases well worthy of serious thought.

This is too broad a subject to handle in a single article, therefore only incidents will be touched upon that have come forcibly to the writer's attention in hospital work. If it is true, as it undoubtedly is, that the immortal ounce of prevention is so valuable in looking after the welfare of the health of the individual or a community, it is also true that this maxim applies emphatically in managing hordes of patients gathered together for treatment of a variety of maladies by workers exposed to these same maladies. In such a gathering care must be taken to prevent one patient's disease spreading to another at the same time as we treat that disease. Should a rapidly spreading contagion break out, if strict precautions are not taken to confine this, the invalids around are likely to fall easy victims to its devastation. Do not be sparing of isolation, fumigation of rooms with formaldehyde, and of taking advantage of culture and inoculation methods to prevent spread of the contagion.

In waiting upon invalids it must be so done as to get results without accidents. We shall see that all this is to be accomplished by proper experienced training of doctors, nurses, and orderlies, and untiring attention to details in assisting in the work of handling cases. Let us take a few examples of what has happened and what might happen to a healthy inmate or to a patient in the throes of sickness or to one convalescing from some recent illness. To begin with, a person in health feigning some disease should not be admitted to a general hospital; such a person and drug fiends are the ones liable to start trouble.

In going for a patient unless undue speed of the ambulance is regulated by competent employees, a person may receive in transportation a worse injury than that for which help was sent. Obviously this is true to a certain extent in all walks of life; we of this day are the heirs of an age and environment that claim their own percentage of unfortunate victims of unforeseen accidents. Yet it is recognized that splendid control over unnecessary mutilation is being accomplished by safety devices, improved apparatus in good working order, and trained help. There are very few accidents and diseased states recognized that cannot be handled on a well equipped autoambulance until the hospital is reached so as to make it necessary to save a few minutes' time by going at a speed dangerous to pedestrians and passengers alike. Again, sometimes extra risk of life is involved by the practice that should be discountenanced of taking an extra passenger just for the ride, and insurance companies lay emphasis on this point.

The receiving ward of a hospital should be well supplied with medical attendants and equipment. Here we should be prepared for emergency cases, and have order so established as not to have confusion when more than one patient is brought in at a time; this will prevent disorderly conduct and disorderly treatment, by which term is meant a form of treatment which after all is no treatment at all,

*Read before the Philadelphia County Medical Society, January, 1913.

in that the one pretending to treat gives for example a hypodermic injection to one patient, leaves this patient, and orders something for another without examining and without noting that it has been given and then leaving without following up either case to the ward so as to instruct what has been done. It is something of this sort no doubt that Dr. John B. Murphy refers to in his recent observations upon things that sometimes take place at hospitals. We cannot have perfection, but we wish to strive for ideals with what meagre money is allowed for use.

Every orderly and attendant of an institution should know how to carry a stretcher, how to handle a patient with a broken back, how to transfer a patient from one place to another without dropping or striking the patient, and how to prevent and extinguish an ordinary fire. Every doctor and nurse should know how much heat it takes to burn a patient and should avoid this, except when intentional, as in the use of the cautery. Every one connected with a hospital should persist in remembering that ether vapor, alcohol, and benzine are highly inflammable; that inflammable substances are constantly being handled. Every one within the walls of such institutions should never grow weary of hearing the oft repeated admonition that delirious patients are liable to jump out of the window if not restrained and carefully watched.

Many a can of ether and many a drop of chloroform might be saved, and what is more important, many an organ saved from insult by discountenancing the indiscriminate lavishing of these drugs. No doubt if there were some one or something to call the attention of the doctor to the possible preference of one anesthetic over another in a given case, an incipient tuberculosis might be saved from lighting up, a necrosis of the liver or a nephritis averted, and occasionally a life spared. Every patient should be properly prepared for operation except in emergencies; oxygen should be kept near at hand, anticipating trouble; the oxygen tank and emergency kit should be in good working order when called to a fire; an intubation set should be ready for use and not locked away where it cannot be found; the pulmotor, it may be remembered, may be of use in asphyxia.

All elevators should be in proper working order. Elevator inspectors are supposed to look after the proper handling of elevators; underwriters, of wiring and electrical connections; the hospital management, of the welfare of patients and cleanliness of the institution. The mistakes of the past should guard against trouble and exaggerated publicity (I do not mean timely caution) in the future.

What does the simple municipal regulation of reporting transmissible diseases mean? It means that if these cases in hospitals, as well as in private homes, are properly reported by postals provided for that purpose, the health authorities of the city will have a better chance to control these diseases. I think it advisable also to report cases of syphilis and gonorrhea, if done in the right way by initials, and in the confidence of a conscientious physician working in harmony with State prophylaxis of disease. In the same way the hospital has an excellent opportunity of keeping the coroner informed of cases of criminal abortion and the practice of midwifery so as to protect the worthy and correct the wrongdoers.

Let us now turn our attention to the matter of administering drugs, and I shall cite a few cases in this connection.

Some serious mistakes have happened, especially in large institutions, through disordered medicine closets, bottles not properly labelled, careless nurses, and lack of the special precaution of having all poisonous drugs kept in small, rough, colored bottles with distinct labels worked in the glass. What a pathetic picture to see a Socrates sent to the shades of death with his own bitter cup of hemlock! But think of the remorse when that fatal cup comes by the mistake of another! Some untimely accidents have no antidote; their only hope is the cup of prophylaxis, and remorse will prove no healing unction for the bitter sting.

There were once two tuberculous patients given each a drachm of spirit of nitroglycerin by mistake instead of a minim. The bottle was mistaken for one containing a solution, one drachm of which contained one minim of nitroglycerin. In a short time a unique picture of nitroglycerin poisoning was presented. There was retching, the face flushed greatly, and then turned pallid, violent cephalalgia and vertigo occurred with severe chills, perspiration, painful consciousness, small pulse becoming wiry and imperceptible; later retching, diarrhea, and unconsciousness. Fortunately, the mistake was early recognized and the doctor was soon called. The drug had been rather rapidly absorbed. Hyperdermic injections of digitalein, grain 1/40; atropine sulphate, grain 1/100; strychnine sulphate, grain 1/10, and whiskey were given; external heat was applied, salt solution administered, and in about one half hour reaction set in. The convalescence was slow, but both patients fortunately recovered. This upset should all have been avoided. Other errors that could have been avoided have been noted during a rather prolonged experience in hospitals.

On one occasion an irresponsible patient deliberately drank a cupful of bichloride of mercury solution, one to eight, that was recklessly left out of the closet. After washing out of the stomach, administering white of eggs and stimulants, and treating with mouthwashes, salts, etc., she was finally rescued; as a rule, the kidneys of these cases are liable to become inflamed. On another occasion the druggist made the error of putting up formaldehyde in a paraldehyde bottle. A patient received two drachms of this solution and then had to be treated for formaldehyde poisoning. These cases were seen a considerable time previous to this present year. To be sure, some fiends can stand enormous doses and sometimes require such of regularly used drugs, but none of the cases cited came under this category. Let it be said here that no hospital should ever be the breeder of drug fiends.

A hospital is essentially an educational institution. It should set a good example, even in such seemingly little matters as the use of individual drinking cups, the destructible sputum box, proper ventilation, rest, bathing, and order. Great opportunities for research investigation and for training of doctors and nurses and disciplining of patients lie within our reach. The modern trend of therapeu-

ties is toward preventive medicine; why not show what we can do in details and also in large problems in the way of preventive methods of management? Harvard now has a professor of preventive medicine, our own Doctor Rosenau.

You know how many unpleasantries might be avoided in dealing with people in general! If families are notified, when possible, before death of the critical condition of their loved one, they will suffer less mental anguish and appreciate your efforts; if opportunity of offering the last religious rites is thought of, it too may bring comfort. If previously written permissions for anesthetizations, operations, autopsies, and the like are secured, it may save legal aftertrouble and distress. In short, anticipate the needs of the patient; practice the Golden Rule, as well as medicine.

One of the places well adapted for the use of prophylactic antityphoid bacteria is in a large hospital that handles cases of enteric fever. You offer the nurses and attendants handling the cases a preventive serum which has been found of use and at the same time not harmful. In the presence of contagion preventive doses of diphtheritic serum are administered; tetanus antitoxine and Pasteur virus are recommended to be given early when they can do real good; the former is given to dispensary patients having nail wounds or powder burns, the latter to patients bitten by an animal under strong suspicion of being mad, or one that responds to the laboratory tests for rabies. It may be noted here that in case of death all tetanus cases are to be reported to the coroner in this locality.

Vaccination against variola is dispensed unstintingly but carefully. Systematic regulations requiring proper ventilation, proper bathing, boiled water, pure foods, and graduated exercises all go to keep the institution as a whole in a state of less vulnerability than would otherwise exist. Points of seeming insignificance are to be borne in mind, such as the early outfitting with screens and killing of flies to prevent spreading of noxious diseases; removal of garbage and material upon which germs breed; regulation of visitors to prevent bringing in contagions; control over the house staff to get prompt, serious, and efficient service.

In a word, we must in this day face large problems of preventive medicine and surgery. We must, moreover, illustrate these up to date principles in the hospitals.

This is a wide, wide field and it is all of a gradual, natural development.

3304 BARING STREET.

CARCINOMA OF A HYPERPLASTIC HYPOPHYSIS.

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The advances of our knowledge of the structural alterations incident to pathological physiology or maladies in inducing cessation of function of the ductless glands, have brought into prominence among other organs the hypophysis cerebri, also called the pituitary gland because it was thought to throw pituita into the nostrils.

It occupies the sella turcica of the sphenoid bone, is ovoid, measures in its transverse diameter twelve mm., in its sagittal eight mm., and in its vertical five mm. A prolongation of the dura encloses the gland, except above where exists a small aperture for its connection with the infundibulum. It is composed of an anterior and posterior lobe, the former comprising the greater part of the organ, but differing in their origin and architecture.

The anterior lobe is encapsulated, is grayish red, and receives the infundibular process in the hilum-like depression on its posterior aspect. On either side of the median line, anteriorly, dense connective tissue marks the position of the bloodvessels. From the capsule delicate fibrous strands, containing the capillaries, invade the lobe and divide it into many alveoli which are occupied by cuboidal or polyedral epithelial cells, of which there are two types, the smaller, feebly staining chief cells, and the larger, deeply staining, chromophile cells. Sometimes these elements are so disposed as to line the alveoli, forming acini, the lumina of which occasionally contain a colloidal substance; sometimes the cells are found in all parts of the alveoli.

While the posterior lobe is developed from that part of the embryonic brain which afterward becomes the third ventricle, no elements are present which can be identified as nerve cells, but many have the appearance of neuroglia.

Lying between the two lobes is the pars intermedia which is formed by an epithelial stratum, a few cells deep, which bounds the interglandular cleft posteriorly. The layer of elements next to the lumen of the cleft has the appearance of ependymal cells.

The diseased hypophysis has been attacked during life by Sir Victor Horsley, Hochenegg, von Eiselsberg, and others, hoping by its removal to relieve human suffering. Hochenegg reports favorable results by the removal of the organ in cases of acromegaly.

The belief, at one time existing, that this disease was always associated with tumors of the pituitary gland received a shock, since twenty-seven or twenty-eight cases of acromegaly have been made known in which a tumor did not exist. That however, does not prove the innocence of the hypophysis in its relation to the disease, as it is now held that excessive functional activity of the gland may be responsible for acromegaly.

CASE. J. M., male, colored, aged fifty years, was admitted to the Grady Hospital April 19, 1911, in an unconscious state, having been brought from the place of his employment, where according to his fellow workers he complained of a suddenly developing weakness which soon gave place to unconsciousness. From his coworkers it was also learned that he had been taking some drug in tablet form which led to a suspicion of fatal poisoning. From the dead man's daughter the following facts were elicited: Eleven years before the patient used to suffer from attacks of headache as often as once a week or once every ten days. Under the care of a physician he improved and had no further trouble until eight months previously when the headache recurred, attacking the patient more frequently and each attack lasting longer than at first. About three years before his death he suffered from a nasal discharge, the nature and details of which could not be learned. Two months before his exitus the

nasal discharge recurred, being profuse and of a dark red color. About one month before April 20, 1911, he experienced difficulty in using his right leg. It required great effort to raise the limb from the floor. One month before his death he spoke of dimness of vision especially in his right eye; it appeared as though there were a growth in his eye. The patient became fatigued readily during the last two months of life; although there was no loss of weight nor any evidence of excessive deposits of fat. He had a good appetite and slept well.

It was not possible to make a physical examination even of the eye grounds. The taking of the tablets lent some weight to the suspicion of poisoning, but neither the gastric contents, the urine, nor the feces revealed anything to further the suspicion.

Autopsy. Body was that of a well developed and well nourished adult, colored male. Rigor mortis was broken easily. There was no external evidence of violence prior to death. Lips were rather large and protruding, but the degree was not unusual for a negro. The upper extremities did not reach below the middle of the thighs; no excessive subcutaneous fat.

The peritoneum was smooth and glistening, and the cavity contained a small amount of fluid. The left pleura was free from adhesions; the membrane was smooth and glistening; the cavity contained a small amount of fluid. The right pleura was universally adherent. The pericardium was smooth and glistening, and the cavity contained 10 c. c. of straw colored fluid.

The heart was large; the musculature bright red, fairly firm, and was not easily pinched through. The musculature measured 2 c. c. at its thickest point. The papillary muscles had somewhat flattened summits and presented yellowish gray, soft areas at a few points. The posterior mitral leaflet was somewhat thickened along the line of contact but the structure was pliable. The anterior leaflet on the ventricular aspect presented a few atheromatous patches. The aortic leaflets were slightly thickened but they were pliable and competent. The coronary arteries were thickened; the intima contained numerous elevated, yellow, rather soft patches. The lungs, thyroid, spleen, and adrenals showed no gross evidence of disease.

The left kidney showed fetal lobulation. The capsule was slightly adherent; the stripped surface was smooth and dark red; the organ was somewhat firmer than normal. The cortex was normal in width, dark red, and oozed blood. The medullary portion showed no macroscopic evidences of disease. The right kidney showed changes like that of its fellow. The bladder contained 300 c. c. of clear, straw colored urine. The mucous membrane was pale, but smooth and glistening. The middle lobe of the prostate was slightly enlarged. The internal meatus of the urethra was elevated. The stomach contained 200 c. c. of greenish black fluid; the mucous membrane was pale, somewhat irregular, and contained a few erosions. The submucosa was slightly thickened. The intestines showed nothing noteworthy. The liver was about normal in size but flabby. The external surface was smooth but presented a mottled appearance. Some areas were irregular in outline, yellowish gray, and rather soft; the greater part of the surface was reddish brown. The organ cut easily; the incised surfaces were somewhat blurred, reddish gray with yellowish mottling. The yellow gray areas were due to fatty infiltration. The pancreas showed nothing abnormal. The aorta, upon its intima, just above the bifurcation presented a few atheromatous patches.

The brain meninges were congested at some points, especially over the lesser brain. Just anterior to the pons and passing along the right side of the crus, between the temporal lobe and the optic tract as far as the optic chiasm, was a soft, reddish brown, almost structureless mass which had pushed the optic tract to the left of the median line. The mass did not penetrate the pons nor the cerebellum but was undoubtedly a part of the structure occupying the sella turcica, the hypophysis, which was clearly enlarged, measuring 2.3 by 1.2 cm. Although the mass arose from the pituitary, the contour of this organ could still with difficulty be outlined. The cut surfaces of the hypophysis were reddish brown with grayish mottling. The mass appeared to take its origin from the inferior and posterior aspect of the pituitary.

The sella turcica measured 4.5 cm. in the transverse and 4 cm. in the anteroposterior direction. The posterior wall of the sella turcica was wanting. There was a large communication between the sella turcica and the sphenoidal sinus.

Diagnosis: Tumor of hypophysis; slight chronic interstitial nephritis; chronic myocarditis; chronic adherent pleurisy; chronic gastritis; mild degree of arteriosclerosis. Histology: The sections from the tumor were alone of interest, hence the other will not be described. The sections from the tumor could be for convenience of description divided into four parts: 1. Glandlike tissue clearly from the hypophysis; 2, a partitionlike structure evidently pars intermedia; 3, tissue not unlike some seen in the central nervous system, undoubtedly the posterior lobe; 4, a neoplastic structure.

1. It was surrounded by a dense fibrous tissue band in which there were numerous cells some of which were polyblasts. From the capsule trabeculæ extended into the underlying structure and produced many alveoli, the walls of which were thin and contained delicate capillaries filled with red blood cells. The vascularity of this part was a conspicuous feature of the sections. Some of the alveoli were lined with cells so that these structures looked not unlike acini, but in the majority of instances the cells lay in the lumina of the alveoli. The cells were not all alike; some were large, measuring from thirty to forty microns and were polyedral in shape. The protoplasm of the cells was very granular and possessed a marked affinity for the picric acid. The nuclei had well defined walls measuring from six to ten microns, were composed of a rather loosely woven structure containing a small amount of chromatin, which was scattered throughout the nuclear substance. The smaller cells ranged from twenty-five to thirty-five microns in diameter. The protoplasm was finely granular, was transparent, feebly staining, selecting the picric acid with no great affinity. The nuclei were ovoidal, measuring from six to nine microns, had well defined walls, were vesicular, and contained a small amount of chromatin which was scattered throughout the nuclear substance. It was no difficult matter to distinguish between these two types of cells in section stained by hematoxylin and van Gieson's method, but the differentiation was not easy when counterstained with eosin. In most of the alveoli the large cells predominated; in a few the smaller cells were the more numerous. Few alveoli contained a hyaline acidophilic substance, and this was usually found in those alveoli lined with epithelial cells.

2. This part lay in contact with the second part which was composed mainly of dense, deeply staining fibrous tissue in which were several spaces lined with low columnar epithelial cells and filled with a homogenous, acid staining mass containing a few rather large polyedral cells, possessing ovoid rather deeply staining nuclei. Their protoplasm was fairly abundant, granular, and acid staining. These cells were identical with the small cells in the alveoli of the first part of the sections and with those lining the spaces in which the hyalin masses lay. One space was rather large, occupying nearly one half of the second part. The others were not over 100 microns in diameter. There were present a few spaces lined with low columnar epithelial cells, but containing no hyalin substance.

3. The third part of the sections was traversed by delicate, acid staining strands which apparently acted as a framework and in which were small capillaries. The strands supported cells and delicate fibrils. The latter stained poorly, were granular and intercommunicated. Many of the fibrils were cut transversely, producing a granular appearance here and there. The cells found among the fibrils were irregular in shape, varied in size, ranging from twenty to thirty microns; the nuclei of some were ovoidal, others were oat shaped, all were vesicular, and stained feebly. The protoplasm was finely granular, feebly acid staining, and varied in amount. From the margin of those cells delicate flagellalike filaments sprang and soon became lost in the adjacent tissue. The structure of these filaments was identical with the poorly staining fibrils already described. The second part separated the first and the third at one point, with the exception of which the first part surrounded the third.

4. The fourth part was made up of many alveoli which varied in shape and size; they did not show the uniformity in shape and size seen in the alveoli of the first part but they, too, were filled with cells which were polyedral and

varied in size. The nuclei of these cells were ovoid, well limited, contained considerable chromatin and stained rather intensely. The protoplasm was granular, fairly abundant, and stained rather deeply. The cells bore a feeble resemblance to the small cells in the alveoli of the first part of the sections. Sometimes they lined the spaces, but in the greater number of instances they were scattered indiscriminately throughout the alveoli. The stroma at some points was abundant, at others rather scanty; at all points it contained very few cells. The points containing an abundance of stroma contrasted this part strongly with that of the first part.

The stroma also contained the bloodvessels which were few in number, another marked contrasting feature with the vascularity of the first part. While these parts were mostly fairly well defined, there was one point in the sections at which it was impossible to distinguish between the first and fourth parts, one gradually merging into the other. The picture was so clear that one could not doubt that the fourth or neoplastic part sprang from the first.

The sections of the tissue comprising the mass along the optic tract were made up of structure identical with that of the anterior lobe of the pituary and of structure like that of the neoplastic part of the first section described. The study of the section left no doubt that the anterior lobe of the hypophysis in this case was considerably enlarged, for we found its substance beyond the bounds of the sella turcica.

It is probably beyond human possibility to determine whether the enlargement was due to a hypertrophy or hyperplasia, or whether we have to deal with an adenoma of the gland. If an adenoma is responsible for the increase in size, it is not possible by means of the microscope to distinguish between gland and tumor, but this fact can be ascertained, viz., that the tumor arose from that part of the structure occupying the normal position of the organ. My studies of the normal organ strongly incline me to view the enlargement as a hyperplasia. This term strictly means increased tissue, and many authors apply this term to those forms of hypertrophy in which the increased functional capacity is due to an increase in the number of parenchymal cells, in which case there must be an increase in the supporting structure; yet a histological picture of that kind does not always signify hypertrophy, and as an illustration one need but cite parenchymatous goitre.

This case was not studied during life, so that it is a difficult matter to deny that there existed a hyperpituitarism, for there is no means of determining whether overtension existed. The family could give no information whether or not the patient suffered with polyuria. Glycosuria, emaciation, obesity, imperfect development of organs were not present. With regard to the hypopituitarism, one can say that there was not present anorexia, insomnia, nor diminished growth; asthenia was manifested about one month before death; whether lowered tension was present during life no one knows. The absence of changes in the thyroid gland indicates persistence of function of the hypophysis.

When all phases of the case are considered, I am very much in favor of viewing the condition as an enlargement or hyperplasia of the pituitary gland, comparable to parenchymatous goitre, the hyperplasia having become carcinomatous.

I do not doubt that choked disc was present, although I have seen a case in which choked disc was absent, but in which there was displacement of the optic tract identical with the change that had taken place in the case here recorded. I have grave doubts whether the diagnosis of enlargement of the hypophysis could have been made in this case by the changes in the optic chiasm, the bitemporal hemianopsia, for the tract, especially the right, was also involved. The astute clinician might have taken the clue from the profuseness and the character of the nasal discharge, had the patient presented himself for treatment before the sudden onset of unconsciousness.

For the privilege of recording the case, I wish to express my gratitude to the authorities of the Grady Hospital of Atlanta, and to Doctor Strickler, under whose service the case was admitted.

Carnegie Laboratory.

TUBERCULOSIS OF THE LIVER WITH JAUNDICE.

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Tuberculosis of the liver occurring in the course of general acute miliary tuberculosis, or secondary to tuberculous disease of the lungs or intestines, is by no means uncommon. It may indeed be very extensive, the liver being crowded with tubercles, yet only rarely is it in sufficient degree to be associated with jaundice. Still less common are those cases where the liver is the only, or the most affected organ.

This condition of jaundice produced by tuberculosis of the liver does, however, occasionally occur. The clinical picture seems to be fairly definite, and as it has received only very scant attention in the literature of tuberculosis, it may be of value to record the following two cases, in which there was severe jaundice and the liver was the seat of extensive tuberculosis. The physical signs which were manifested were chiefly referable to the liver, yet the true condition responsible for the jaundice was not recognized during life in either case.

Case I occurred in a somewhat wasted but well developed man, aged fifty-eight years, who had come under observation for alcoholic peripheral neuritis. He presented no bone or joint conditions nor any other special lesion except a very slight enlargement of the liver, which could be faintly palpated 1.5 inch below the costal margin in the right midclavicular line. Four weeks before the date of his death his temperature began to rise to 101° F., and sometimes to 102° F. He became rapidly weaker, his gums became very spongy, and he had several attacks of epistaxis. His bowels became very loose and there was some slight melena. His case closely resembled typhoid and his abdomen slowly became distended by gas and was slightly rigid and tender. The Widal serum test was negative, but a positive von Pirquet tuberculin reaction was obtained. Eight days before death the liver was noticed to have become considerably larger, reaching down to 2.5 inches below the costal margin in the right midclavicular line. The spleen was apparently slightly enlarged, but as the abdomen was so distended with gas, its exact size was difficult to determine. At this date also jaundice developed and rapidly progressed in intensity. His blood count averaged about 14,000 leucocytes to the c. mm. during the last four weeks of his illness, seventy-five per cent. of those being polymorphonuclears. In the last eight days during the period he was jaundiced, the leucocytes numbered only 4,600 to the c. mm. The temperature continued swinging irregularly from 99° to 102° F. till the time of death. The

pulse rate averaged from 90 to 100 a minute. He died in a very jaundiced and asthenic condition.

The autopsy showed the liver to be enormously enlarged (weight 2,950 grammes), and extending 12.5 cm. below the xiphoid cartilage. It was almost completely filled with miliary tubercles. On microscopical examination very little liver tissue could be found, as almost the entire liver seemed to be replaced by acute miliary tubercles. There was apparently no increase in fibrous tissue, and it did not seem to be a cirrhotic liver which had been tuberculous.

The spleen likewise was greatly enlarged, soft, dark in color, and weighing 825 grammes. Like the liver, it was crowded with acute tubercles, and there were numerous small hemorrhages. Its fibrous stroma also did not appear thickened. The kidneys both showed a rather large number of tubercles in the cortex. The peritoneum was not thickened nor tuberculous and its cavity contained only a very small amount of yellowish fluid. There was no tuberculosis in the mesenteric glands, intestines, bones, mastoids, lungs, pleura, brain, nor lymphatic glands anywhere, that could be determined. There were a few pleural adhesions at the apices of both lungs, but no fluid in either pleural cavity.

In this case the tuberculous process seemed to be uniformly acute. No old focus could be found, although it is hard to believe that such an extensive tuberculosis of the liver and spleen could arise without there having been some tuberculous mesenteric gland or intestinal ulceration. It was also remarkable that the tuberculous process in the liver and spleen were so widespread, yet apparently the lungs and other organs of the body were not affected.

Case II occurred in a man, aged forty-two years, who came into the hospital complaining of pain in the right side under the edge of the ribs, and sometimes referred to the back. He was considerably jaundiced, but no history could be obtained of when this had commenced. As he spoke no English, very little could be learned about him. He was born in Greece, and had lived there until fourteen months previously, at which time he arrived in the United States. He had been employed in railroad work in Louisiana and Texas. He could give no history of any previous illness, except that of a sabre cut over the right hip four years previously.

On physical examination, there was slight general emaciation. He was considerably jaundiced. Over the posterior part of the right hip there was a scar about six inches in length, the lower part of which extended into a sinus, which discharged a small amount of thin pus, and which, on probing, seemed to end blindly. It had no apparent connection with the underlying bones or joints. The hip and sacroiliac joints did not seem to be involved. His vertebral column did not seem to show any special change. The abdomen was slightly prominent. There were no distended veins on the surface of the abdomen or thorax, and no ascites. The upper part of the abdomen was tender on palpation. The liver was considerably enlarged. Its upper border was at the fourth rib in the right midclavicular line. The lower border, which was readily palpable, extended three inches below the costal margin in the right midclavicular line. The spleen was also slightly enlarged. Its anterior border extended as far forward as the anterior axillary line. The lower border could be palpated one quarter inch below the costal margin. The stomach was not dilated, nor was the large intestine in any part.

The heart was not dilated. There were no cardiac murmurs. The sounds were short, sharp, and not reduplicated. The pulse was regular, small in volume, averaging from 90 to 100 a minute, and of low tension. He had no dyspnea, cyanosis, nor cough. The chest was slightly superresonant throughout. There were no dull areas on percussion. The breath sounds showed no abnormality on auscultation, except some slight prolongation of expiration. There were no crepitations in any part of the chest.

The urine was acid, specific gravity 1.030, and contained a considerable amount of urates, but no albumin, sugar, nor casts. There was a small deposit of pus cells and a few bladder epithelial cells. The urine contained no blood, and no tubercle bacilli could be demonstrated.

The blood count showed 10,000 leucocytes to the c. mm., polymorphonuclears, 85 per cent. and hemoglobin, 90 per cent.

The temperature varied daily from 89° to 101° F., being at its maximum in the afternoon.

The case was considered to be one of obstructive jaundice from gallstones with cholecystitis. Laparotomy was performed five days after his admission to the hospital. The liver was found to be markedly enlarged and rather firm. Its surface was smooth and appeared congested, but otherwise was reported as showing no other change. There were some adhesions at the hilus of the liver. The gallbladder was imbedded in adhesions and could not be distinguished. No stones were found in any part of the biliary system. Nothing was done at the operation, except to free some of the adhesions along the upper part of the bile duct. The jaundice markedly lessened after the operation, and his general condition greatly improved.

During the following fortnight, the temperature did not rise above 100° F., and for the next four months continued almost normal, the jaundice at this time not being very marked. Four months after the operation, jaundice again became very marked. The temperature began to intermit daily between normal and 102.5° F. The patient began to cough considerably. The sputum was viscid and mucopurulent, but contained no tubercle bacilli, demonstrable either by staining or inoculation methods. There was no blood in the sputum at any time. At the apices of both lungs there was marked dullness as low as the second interspace anteriorly. Posteriorly, also there was dullness, at both apices and in both interscapular regions, extending as low down on the left side as the angle of the scapula. Over these dull areas there were faint bronchial breathing and numerous fine crepitations, and the vocal resonance was also considerably increased. A few crepitations could also be heard at the end of inspiration over the bases of both lungs.

The abdomen remained slightly distended, but no ascites developed. There was no diarrhea or melena at any time. The jaundice increased markedly in the next two months. Patient became very emaciated and died in an extremely asthenic condition seven months after the onset of the present symptoms.

At autopsy, the body was that of a large, emaciated man, 125 pounds in weight. The abdomen was slightly distended. On being opened, the liver was found very markedly enlarged. This enlargement was chiefly of the left lobe. The right lobe was shrunk, and about the size of a small hen's egg.

The gallbladder was somewhat distended, and both it and the bile duct contained blackish, viscid, almost inspissated bile. The surface of the liver was smooth, and no tubercle could be made out on its surface. The entire liver, on section, was found to be crowded with small caseous tuberculous foci. The right lobe contained numerous, fairly large, caseous masses, resembling somewhat the substance of a sebaceous cyst. There were extensive adhesions on the under surface of the liver and around the bile duct. The stomach was not dilated. The intestines were somewhat atrophied. There were no peritoneal adhesions except in the upper part of the abdomen. The omentum was contracted and drawn up to the inferior margin of the stomach. There were no ulcerations in any part of the small or large intestine. The mesenteric glands were enlarged, some of them considerably, but on section they did not appear to be caseous. Both kidneys were slightly enlarged. On the surface of both there were several small cysts. The cortex was slightly reduced in thickness, congested, and somewhat fatty. The left adrenal gland was enlarged and contained a large, whitish, firm, yellowish mass of old caseous material. The right adrenal gland was smaller than the left, and adherent to the liver. In the anterior border of the upper pole there was a caseous focus similar to what was found in the right adrenal. The spleen was considerably enlarged. Its surface was smooth and showed no evidence of tubercle. On section, the interior of the spleen was found to be crowded with small, caseous, tuberculous foci.

The prostate was not enlarged and showed no evidence of tuberculosis. The urinary bladder showed no special change.

The pericardium was not adherent. The heart was somewhat atrophied. The valves showed no abnormality. Both pleuræ were obliterated by dense adhesions. In the upper

lobe of the right lung there were extensive patches of tuberculous bronchopneumonia. In the upper lobe, and to a less extent in the lower lobe, many of the bronchopneumonic patches had broken down into small acute phthisical cavities. In the left lung there was a similar condition, with a fairly large acute cavity in the upper outer portion of the lower lobe. The bronchial glands on both sides showed extensive chronic caseous tuberculosis. The larynx and tonsils did not seem to be involved.

On microscopical examination, the liver and spleen were found to be crowded with caseous tuberculous areas from which tubercle bacilli could readily be demonstrated, and which were surrounded by numerous giant cells. All the mesenteric glands examined contained foci of subacute or chronic tubercle. The condition of the lungs was also definitely tuberculous.

The oldest focus in the body was apparently in the adrenals. The condition in the mesenteric glands was not recent, but did not seem to be of especially old standing. The involvement of the liver and spleen appeared to be of older date than the condition of the lungs, in which organs the tuberculous process seemed to be particularly acute.

Both of these cases presented much the same train of symptoms, although the first was much more acute. In each there was marked jaundice. The temperature and general condition was obviously tuberculous. The liver was particularly involved. In the first case the liver and spleen seemed to be the only two organs affected. In the second the disease was more widespread and much less acute, but in this case also the most extensive disease was jaundice of the liver and spleen. As the spleen and liver in both cases were apparently equally involved and the disease process so uniformly distributed in these organs, it appeared as if the infection originally was disseminated from some tuberculous focus in the mesenteric glands. In the first case, however, the mesenteric glands did not show any gross old standing disease. In the second these glands were tuberculous, but in this case also the process was not particularly advanced. In view of the extraordinary frequency of tuberculosis of the mesenteric glands without any extension to the liver, it is difficult to understand the factors which determine the widespread involvement of the liver and spleen in some cases. The same conditions, however, may be found in the relation of infection of the bronchial glands to pulmonary tuberculosis. The intestines in both cases showed no evidences of any ulceration, either old or recent. In the second case, what seemed to be the oldest focus was situated in the adrenals.

Similar cases have been described and numerous types of tuberculosis of the liver have been elaborated, particularly by French writers (5, 6). They vary as regards the duration of the disease. The history in practically all of them seems to begin with epigastric pain. The temperature is irregular. Very often the symptoms are very closely related to typhoid fever. The liver becomes enlarged, and toward the end jaundice usually develops. In some cases this process is very acute, and in others it is more chronic and the patient may remain jaundiced for a considerable time.

The relationship of tuberculosis to cirrhosis of the liver has been extensively discussed. Undoubtedly these two diseases not uncommonly coexist. In the cirrhotic liver, tuberculosis does seem to be specially liable to develop. Some authorities have also maintained that in such cases the cirrhotic process may be the result of tuberculosis. In the present two cases, however, there was no histological evidence of any coexisting cirrhosis.

These two cases may then be added to the literature on tuberculosis of the liver, on which subject, although not altogether scanty, it is somewhat indefinite. Although the present cases and most of those recorded seem to have produced a fairly distinct clinical picture, the diagnosis has generally been confused, and cases have been considered as pylephlebitis, cholecystitis, gallstones, or cirrhosis of the liver, and the true condition has been disclosed only at autopsy.

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NINTH STREET AND GRAND AVENUE.

THE DUODENAL TUBE.

Its Value as a Diagnostic and Therapeutic Agent.

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At about the same time in January, 1910, Dr. M. Gross and Dr. M. Einhorn, working independently, published articles in which they described a tube for obtaining the duodenal secretion in man. This apparatus being in reality an elongated stomach tube with a perforated metal ball at the end, differed in certain physical respects, but practically gave similar results. Patients were first given a glass of milk and water, and then one hour later the tube to swallow. While lying on the right side, in the course of time, the end of the tube with the metal ball would pass through the pylorus opening into the duodenum and the secretion was therein obtained. Patients experienced very little difficulty in swallowing the tube and comparatively little discomfort afterward.

This method opened up a new field, and much was expected of it in exploring and diagnosticating conditions of the duodenum, gallbladder, liver, pancreas, etc., and, perchance, in throwing new light upon the subject of diabetes mellitus. Although considerable work by a number of investigators has failed to realize such optimistic hopes, yet the use of the apparatus has not proved entirely unavailing.

At the time Gross and Einhorn first described their respective tubes, the writer was house physician at the Montefiore Home and Hospital, New York, and at the suggestion of Dr. S. Wachsmann, medical director, began to experiment with both of these tubes. Owing to the fact that more satisfactory results were obtained, he preferred the Gross tube, and used it exclusively. It soon became evident that with a little practice and patience, it was quite a simple procedure to obtain the duodenal secretion, which was done successfully in twenty-nine cases.

The amount usually obtained varied from ten to thirty-five c. c. at one sitting, but the chief objection

was the fact that operation consumed from three quarters of an hour to one and one half hours before the secretion was obtained, so, in order to hasten the passage of the tube through the pylorus, a certain amount of success was obtained by placing the patient in the Trendelenburg position whereby the duodenal secretion was elicited within from twenty to thirty minutes. The reason for this was probably the fact that when in this position, the tube by gravity naturally comes in contact with the lesser curvature of the stomach, and has a shorter route to travel in order to reach the ploric opening.

It is not the purpose of this paper to describe the methods employed in obtaining the secretion, nor the tests pursued in making the chemical findings, as several articles which have already been published completely cover that subject as far as present knowledge is concerned. The object is to combine what facts have resulted from the successful use of the duodenal tube, so that its diagnostic and therapeutic value may be brought to the attention of the general practitioner, especially to men interested in gastrointestinal disease.

During the past three years, there have been a number of men who have helped to give the duodenal tube a wider range of usefulness, and when it is considered that the subject is yet in its infancy, there is indeed high hope of great possibilities in the future.

Naturally the first line of investigation led to the use of the tube as a catheter to obtain the duodenal secretion, which consists of a mixture of the bile, secretion of the glands of Lieberkühn and Brunner, and that of the pancreas with some admixture of the gastric chyme, especially at the first portion of the duodenum near the pylorus. A smaller duodenal tube has been devised by Hess, of New York, for obtaining the secretion in infants. The color ranges from golden yellow to greenish yellow or even dark green, depending upon the amount of bile present. The fluid may be clear, turbid, cloudy, or even milky, and the reaction usually weakly alkaline or neutral, although it may vary from strongly alkaline to strongly acid.

Although the chemical examinations assist in differentiating decreased and increased acidity and catarrhal icterus, the duodenal tube has done very little for diagnosis, considering the large field.

DIFFERENTIATION OF DUODENAL AND PYLORIC STENOSIS.

This is usually difficult clinically. The causes are numerous, such as tumors, adhesions, spasms, ulcers, etc.; however, by means of the duodenal tube it can be readily done. Gross states that not only can he tell whether there is pyloric or duodenal obstacle, but he can also locate it, and gain information concerning the stenosis.

DIAGNOSIS OF DUODENAL ULCER.

In a number of cases of suspected duodenal ulcer, by means of his tube, Gross has found macroscopically visible blood particles floating on the duodenal contents. In addition, patients experience a slight susceptibility at the place where the tube rests in the duodenum, because blowing into the tube is felt, but not painfully.

In combination with fluoroscopy and infusions of bismuth, local diagnosis of ulcer has been made by Skinner.

DUODENITIS.

This can be diagnosticated by Gross through changes in the chemical nature of the secretion.

Therapeutically, the application of the duodenal tube has given much more encouraging results with fine possibilities of even greater strides in the future.

TRANSDUODENAL LAVAGE.

This is of considerable value in the removal of toxines produced in the course of fermentation and putrefaction. After the tube is safely lodged in the duodenum, lavage can be effected with the patient in either the sitting or recumbent posture by simply pouring fluid into the glass funnel attached to the outer end of the tube. Jutte states that this method will aid digestion and assimilation, and bring about improvement or recovery in such diseases as bronchial asthma, gout, rheumatism, arthritis deformans, toxic albuminuria, constipation, etc.

Duodenal lavage has been used by Gross successfully in the treatment of chronic duodenal catarrh with the aid of Carlsbad water. A solution of Epsom salts passed through the tube into the duodenum causes prompt evacuation of the bowels.

DUODENAL ALIMENTATION.

This is of great value in the treatment of gastric and duodenal ulcers. The food, which usually consists of a mixture of milk, lactose, and raw egg, is administered at body temperature, like the food normally entering the duodenum from the stomach. Also, the duodenum not accustomed to variations of temperature either too high or too low, would show resentment by symptoms of shock. The food should be given in small quantities (three ounces) every two or three hours, then gradually increasing the amounts until ten ounces are given at a single feeding. It should be administered slowly, as too rapid an entrance into the duodenum will cause flatulence. After heating the mixture, it should be strained.

This method should be instituted in all cases of ulcer where ordinary medical means have failed, and where the general condition of the patient has become worse through rectal feeding.

The advantages of duodenal feeding over rectal are: 1. The tube can be retained in the digestive tract for ten or twelve days without discomfort. 2. The rectum and colon are organs primarily for the expulsion of feces, and some absorption of remaining liquids, whereas the duodenum is an organ where the most important digestive juices are secreted. 3. In the colon we have the last part of the intestinal tract, while the duodenum is the principal section of the digestive apparatus.

In addition to keeping the patient on sufficient nourishment, this procedure puts the stomach at rest in ulcer, and allows healing to take place. Einhorn, and Morgan, of Washington, have been very successful with duodenal alimentation in ulcer, and Einhorn states that even in gastrectasia and gastroptosis beneficial results were obtained, inasmuch as there were reduction in the size and changes in the position of the stomach.

INTRODUCTION AND LOCAL APPLICATION OF REMEDIES.

Einhorn has used argyrol by painting the part of the tube where it rested upon the ulcer with a nearly insoluble form and has had good results.

H. G. Beck has found this method most efficacious for the treatment of amebic dysentery with ipecac. Larger doses can be given without any bad effects.

In ulcus ventriculi, Gross has had successful results with bismuth solutions.

STERILIZATION OF THE INTESTINES BY OXYGEN.

The duodenal tube has introduced an excellent way of cleansing the intestinal tract. A current of oxygen is slowly passed through the tube. The usual amount varies from two to four litres, and one hour afterward, the gas escapes from the anus. It was shown that oxygen acts as an intestinal antiseptic, and that excessive bacterial proliferation could be restricted by introducing nascent oxygen into the small intestine. Fermentative and putrefactive dyspepsias as well as catarrhal conditions are favorably influenced by the insufflation, as oxygen exerts a directly inhibitive effect upon pathogenic bacteria. Very satisfactory results have been obtained with this procedure by Schmidt, of Leipzig, and Gross, of New York.

Other therapeutic uses of the tube are for the removal of gas in severe cases of gastric and intestinal flatulency, and in the treatment of diabetes mellitus. Since theoretical grounds favor the possible improvement in diabetes mellitus by means of pancreatic extract, it seems plausible that the duodenal secretion obtained from a normal healthy individual by means of the tube could be given to patients suffering with this disease, either directly through the duodenal tube or by means of keratin capsules, which would prevent disintegration and digestion in the stomach. Following along such ideas, the writer pursued this method in four patients who were on the usual antidiabetic diet, making quantitative sugar analyses daily, but he was compelled to discontinue this line of investigation after several weeks, owing to circumstances which removed the patients from his observation. In that short period of time, the results, although promising, did not lead to any definite conclusions.

From what has been stated, it is very evident that there is still a large field of unexplored facts in gastroenterology, and it appears that the duodenal tube, although still in the hands of but few specialists, has proved that it has filled a long felt want, and it may, in time, become a part of the diagnostic armamentarium of the general practitioner.

202 Chestnut Street.

BIOSTATISTICS OF THE JEWISH RACE.

Pertaining Especially to Immunity and Susceptibility.

By Lester Levyn, M. D.,
Buffalo, N. Y.

The relative immunity to many contagious and infectious diseases and susceptibility to certain other afflictions (principally of a neurotic origin) possessed by the Jewish race, present a field of study of a most interesting nature. The immunity can be traced as far back as the Talmudic periods, and well proved facts and statistics give evidence of its survival to-day. Why should the Jew, physically inferior to his Christian brethren, ward off with more potent factors the onslaught of disease and emerge from the conflict with a lesser mortality? Let us for a moment make a brief anthropological study of the Jew. His average height is 162.1 cm., span of arms 169.1 cm., girth around the chest about 81 cm., making him the narrowest and the shortest of races. The skulls are chiefly brachycephalic, probably attributable to cerebral development. There is no race that appears less strong and none than can so well resist misfortune. The reason for this is that in soul as well as in body, morally as well as physically, the Jew is the product of a selection that has lasted two thousand years, and has been the most severe and most painful which living beings have ever had to endure. In appearance, notably in the large Jewries of the east, he is small, puny, sickly, pale, and shrunken, yet under this frail exterior is hidden an intense vitality. "The Jew may be likened to those lean actresses, the Rachels and Sarahs who spit blood, and seem to have but a spark of life left, yet who when they have stepped upon the stage put forth indomitable strength and courage." Taking into consideration then the mode of life to which the race was so long subjected it is not strange that it should present peculiarities to the physiologist and statistician.

The first thing to attract our attention is the fact that the longevity of the Jew is greater than that of any other race. This is so well established that in certain countries, America for instance, the Jews are regarded by life insurance companies as especially desirable clients. Almost anywhere, particularly in those countries where the laws are not such as to render existence intolerable to them, the average duration of life among the Jews is considerably higher than that of adherents of other religions and faiths. This does not apply solely to countries where the Jews are largely of the well to do classes, but as well to the poor Jews of Germany, Hungary, England, and Rumania. The United States census report states his "expectation of life" to be fifty-seven years, while that of his Christian brother is but forty-one years. The difference is visibly one of distinction.

We should not be justified, however, in regarding this superiority as a racial phenomenon of a purely physiological nature. It is doubtless due in large part to the difference in customs, to the family spirit of the Jews, to their devotion as parents, to the care of the mother for her children; and also to the chastity in the marriage relations; to the prescriptions of the law, and to the consideration and respect shown by the husband for the health of his wife. Much of the racial relative immunity to various diseases may be directly attributed to a strict adherence to the laws governing the Jewish faith, which embody rigid aphorisms on bodily and dietary cleanliness. Many of the fundamental laws of Judaism have for a nucleus hygienic principles. The early Rabbinical teachings forbade eating the flesh of an animal that had taken poison, or the eating of meat and fish together, or drinking water left un-

covered over night. The danger of drinking water at the beginning of the seasons was taught the people. In times of plague the Rabbis advised the necessity of remaining at home and avoiding the society of men. It was forbidden to touch during a meal parts of the body where perspiration was profuse, to eat from unclean vessels or with dirty hands, or to eat hearty meals before retiring. It is thereby seen that the Torah wished to make of Israel a people that should be healthy and holy, *sanus et sanctus*.

The laws concerning the preparation and selection of all flesh for food, scorned and ridiculed for many generations, are now regarded as important factors in the eradication of disease. In the slaughter houses the methods employed by the shochets in the selection of animals for consumption are worthy of mention. No animals are considered fit for food which show but the slightest evidences of illness or whose bodies in any way are wounded or injured. Such animals are branded unclean and therefore unfit for food. True, the sacrifice of such animals creates a monetary loss, but any sacrifice conducive to an increased resistance to disease and prolongation of life is one which the public will gladly suffer.

In enumerating the various diseases to which the race is comparatively and relatively immune, that which stands preeminently foremost on the list is tuberculosis. Unfortunately, advancing civilization with its congestion of population and subsequent increase in Ghetto life is tending to diminish the extent of this immunity. Doctor Behrend says: "The comparative immunity from the tuberculous diathesis has been recognized by all physicians whose special experience entitles them to express an opinion." Despite the horrible Ghetto environment statistics evidence a lesser extent of the disease than among other races, while in the better classes of Jews, not restricted by Ghetto life, they are but rarely victims of the disease. Many factors peculiar to the race are instrumental to the production of this immunity. Lombroso considers the immunity to be in large part attributable to the fact that the vocations of the Jews require little or no exposure. Another important cause is the cleanliness of the housewives. Instead of resorting to extensive use of the dusting brush they utilize damp cloths in wiping all surfaces, by this means raising less dust and diminishing the risk of inhaling tubercle bacilli. Lastly, but of vast significance, is the fact that the body vitality is not diminished by excessive alcoholic indulgences.

The liability of the race to pneumonic infection is less than that of other races. Reasons for this are that their occupational pursuits are largely of a confining nature, and do not necessitate exposure to the vicissitudes of the weather. Of greater moment is the fact of the race being nonalcoholic.

Smallpox also has a less marked affiliation for the race. This malady attacks the Jew far less frequently than the nonJew. During the epidemic of smallpox in 1900-1903 it is remarkable to note that the race was virtually free from its ravages. The urgency and necessity for vaccination have always held sway among the Jews, they being strong supporters of the efficacy of vaccination, and the promptness with which they accede to it has established this freedom.

The existence of typhoid fever is somewhat less among the Jews than among other races and the death rate from that disease is lower among them. For a period of six years in the city of New York the typhoid mortality rate was as follows:

Germans, 28.01; Italians, 26.16; Irish, 25.56; English, 19.77; French, 18.29; Bohemians, 18.04; Armenians (white), 17.40; Hungarians (mostly Jews), 12.36; Russians and Poles (mostly Jews), 9.19.

The racial resistance to intestinal disorders is far greater than that of other peoples. In the city of New York in the most densely populated Jewish settlement, where eighty per cent. of the inhabitants are of that faith, an analysis of the statistics of the department of health shows that for a period of ten years diphtheria and croup killed five per 100,000 less than among the Christian race. Bearing in mind the low mortality of urban Jews, remembering the admirable conditions for the spread of infection prevalent in the East Side, knowing the congestion, the poverty, the miserably ventilated sweat shops, the never ceasing toiling, can we place belief other than in their wonderful powers of resistance!

The low mortality is not confined to the adults of the race, but applies to the infants as well. The enjoyment of a lower infant mortality is traceable to the deeper devotion bestowed in the children by parents, and the fact that weakened vitality due to alcohol and lues is not inherited. The precocity of the Jewish mind and the rapidity of mental growth are also largely due to this abstemiousness.

The number of stillborn children is much smaller among the Israelites than others, and there are notably fewer illegitimate births.

The prevalence of venereal disease is not nearly as widespread as is seen in others. The ancient and ever present custom of circumcision is the main contributing factor to this absence, enhanced by generations of culture, suffering, and tribulations which have placed the senses under the rule of reason. The race stands to-day as the least carnal of all.

While the race enjoys this relative immunity to many diseases it is not to be envied in every respect, for there remain afflictions which seem particularly prone to attack the Hebrew. Especially noteworthy of mention are maladies of the nerve centres, cerebral and spinal diseases, and diabetes mellitus. The latter occurs from two to six times more frequently among Jews than among nonJews. Strangely, while the disease exhibits such a marked predilection for the race, it is better endured than among other races. Von Noorden states that patients with glycosuria lasting for years, without much discomfort, die from what is supposed to be heart failure. Death through coma is more commonly seen in the Jew (Stern). With our present knowledge of the etiology of diabetes mellitus the only reasons offered for the predisposition of the race to the disease are the nervous theories, together with such contributing factors as sedentary habits, lack of exercise, high living, and overfeeding.

Of the nervous disorders, hysteria and neurasthenia affect the race most frequently. The causes commonly assigned are: 1. The fact that they are

largely town dwellers, these functional nervous diseases being common to the population of a great city. 2. Neurasthenia is seen mostly among the commercial classes, bankers, and speculators, of whom the Jews comprise a great proportion. However, those of the poorer classes, laborers and artisans, are not exempt. 3. Consanguineous marriage was at one time a reason offered, but the more modern views that such marriages when contracted between healthy individuals are not at all detrimental to the health of the offspring contradict this theory. 4. The repeated persecutions and abuses to which the race has been subjected. 5. Such massacres as occurred in Kishineff, in 1903, were of frequent occurrence in the middle ages and their effect on the nervous system of the race could not be other than a rigorous one, transmited hereditarily. 6. The excessive mental and intellectual tax demanded to overcome and outspread environment.

While these conditions rarely, if ever, cause death, yet they exert a most harmful tendency. Kraft-Ebing states: "Neurasthenia and other nervous diseases affect the Jews with exceptional severity."

Amaurotic idiocy and the Mongolian type of idiocy are frequently observed among Hebrews. The causes again advanced are referable to neurotic taints. Marriages of those of near kin have been considered a prominent cause for the prevalence of idiocy in the race, but statistics do not bear out this contention. "It appears that the proportion of idiotic children who are the offspring of cousins is not in excess of the ratio of consanguineous marriages to marriages generally, and the sole evil result of such marriages is the intensification in the offspring of some morbid proclivity common to both parents." In summarizing, it may be said that the race suffers chiefly from the functional nervous diseases, and that the organic nervous degenerations such as locomotor ataxia, and progressive paralysis of the insane are uncommonly seen. Minor states that serious organic diseases of the brain and spinal cord are less frequently met with among Jews than among others.

Apoplexy is another affliction which attacks the Jew with a great degree of frequency. Lombroso attributes the connection to the racial temperament of emotion, struggling with adverse conditions and the persecution of centuries.

Diseases of the heart and circulatory system are more common in Jews, in the United States being double that of the general population. Articular rheumatism so frequently seen in the race is an important etiological factor in the production of organic heart disease. Arteriosclerosis also prevails largely among members of the race, owing to excessive activity, worry, and care. Intermittent claudication attacks the race more often than others, which condition is possibly due to the prevalence of arteriosclerosis.

The proportion of blindness is greater among modern Jews than among nonJews. In America, however, this does not hold true, owing to the stringency of the immigration laws which prevent the entrance of defective classes, including the blind. Considering the etiology of blindness it might be expected that the affliction should attack the race less than others. The most important cause of blindness in the newborn from thirty to fifty per cent. of cases is gonorrheal infection from the mothers. It is a well known fact that gonorrhea is comparatively rare in Jewish women. Conceding this it would be reasonable to think that Jews would have at least twenty-five per cent. less blindness than nonJews. In spite of this the condition is common to the race. Consanguinity, careful investigators contend, is not a factor in the production of blindness, apart from heredity. Trachoma, glaucoma, and diseases of the cornea and uveal tract are largely seen in the race, all of which conditions may lead to blindness.

It is most interesting to note that suicide in the race appears to be less common than among others. Among ancient Hebrews but few cases are recorded, only four cases being specifically mentioned in the Old Testament, those of Samson, Saul and his arrow bearer, and Ahitophel. Later it appears to have occurred with greater frequency. Josephus records the suicide of several thousand Jewish soldiers who were besieged by the Romans in the stronghold of Masaden in the year 72 or 73 A. D. During medieval periods of persecution the Jews often chose self destruction as a means of relief. In modern times the Jews are less liable to suicide. It is generally known that suicide is on the increase in most of the European countries as well as in America. Marselli explains this increase as due to the effects of "that universal and complex influence to which we give the name 'civilization.'" Yet, notwithstanding this pressure the Jew at present rarely resorts to self destruction. Among nonJews about one third of all suicides are directly or indirectly attributable to abuse of alcoholic beverages, and the paucity of such cases in Jews is again explained by their abstemiousness.

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203 EAGLE STREET.

Treatment of Puerperal Sepsis.—Heuze (*Le Scalpel et Liége médical*, December 15, 1912, reports cases in which the production of "fixation abscesses" by the subcutaneous injection of 16 minims (1 c.c.) of oil of turpentine yielded gratifying results. In one case which was already practically in the preagonic period, recovery took place, and similar good results were obtained in others. From his experience in a dozen cases the author is led to characterize the treatment as simple, almost painless, and devoid of danger. The procedure also possesses true prognostic value; in cases where no local reaction is observed after one or several injections, a fatal termination is to be expected.

Prize Essays.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

CXXXIII.—How do you treat influenza, especially in view of sequelæ? (*Closed April 15th.*)

CXXXIV.—How do you treat muscular rheumatism? (*Answers due not later than May 15th.*)

CXXXV.—How do you treat burns? (*Answer due not later than June 16th.*)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (*but not* REQUIRED) *that the answers be short, if practicable no one answer to contain more than six hundred words; and our friends are urged to write on one side of the paper only.*

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of $25 for the best essay submitted in answer to Question CXXXII has been awarded to Dr. James J. Walsh, of Scranton, Pa., whose article appeared on page 931.

PRIZE QUESTION CXXXII.

THE TREATMENT OF OBSTINATE CHRONIC BRONCHITIS IN THE MIDDLE AGED.

(*Continued from page 935.*)

Dr. G. F. Ellis, of Covington, Ky., writes:

A few cases of obstinate chronic bronchitis in the middle aged are secondary to the acute form, but the majority of cases are but symptoms of other diseases. Chronic bronchitis occurs in pulmonary tuberculosis, chronic pleurisy, emphysema, aortic aneurysm, cardiac disease, chronic nephritis, syphilis, gout, rheumatism, and chronic alcoholism. Treatment is primarily directed to any underlying disease found responsible. Four or five varieties of chronic bronchitis are described, but for purposes of treatment two classes are sufficient, moist and dry, according to the amount of expectoration. A change of climate offers the best prospect of relief. If the patient's circumstances admit, he should spend his winters in the south; choosing the moist, warm seacoasts in the dry form of the disease and the dry interior regions, especially the pine forests, in the moist form. If the patient is unable to leave home, we can only endeavor to protect him from all harmful influences and relieve symptoms as far as possible. The patient should wear flannel underclothing but not excessively heavy outer clothing. He should remain indoors in all inclement weather. Outdoor exercise may be allowed on dry, clear winter days, but the vitiated air of theatres and similar public assemblies should be avoided. Occupations necessitating inhalation of dust or irritant vapors should be abandoned. Diet should be generous and easily digested. Alcohol should be forbidden unless specially indicated. Debilitated patients require tonics; cod liver oil, hypophosphites, and syrup of ferrous iodide being most suitable. When excessive cough threatens cardiac exhaustion, digitalis, strychnine, and nitroglycerin may be indicated.

In the dry form of chronic bronchitis the main object of treatment is to increase expectoration. This is best effected by the use of warm, moist inhalations given in the steam atomizer. For this purpose, a solution of sodium bicarbonate and borax, ten grains of each to one ounce of water, answers every requirement. This may be made more agreeable by the addition of aromatics, as in Seiler's solution or the liquor antisepticus alkinus (N. F.). Oily solutions are not suitable, as they tend to increase dryness. Iodide of potassium or sodium is the best internal remedy. It should be given in five grain doses every three or four hours until free expectoration is produced. Ipecac, senega, and squill are useful expectorants, but will often derange the stomach. Ammonium carbonate and benzoate are useful given in five grain doses every three or four hours. Opiates should not be used as routine treatment, but are sometimes necessary to relieve harassing cough.

In the moist form of chronic bronchitis the indications are entirely different. Cough is rarely painful and expectoration is to be checked rather than promoted. Here oily inhalations are properly used. A few drops of eucalyptol and creosote may be dropped into a cup of boiling water, and the rising steam inhaled. Internally, the bronchial antiseptics are indicated. Terpin hydrate, syrup of tar, cubebs, and copaiba are useful. In the mucopurulent and fetid forms of bronchitis, creosote, eucalyptol, and myrtol are excellent remedies. Any one of these may be given in five minim capsules every four or five hours. Calcium sulphide, one grain every two hours until the breath has a distinctly sulphurous odor, is also very efficacious in these cases. Where the pyogenic organisms are demonstrated in the sputum, serum or vaccine therapy might be of benefit.

Dr. H. S. Mathewson, of Milwaukee, Wis., remarks:

This disease is essentially a winter ailment and affects largely city dwellers north of latitude 35. In the open country it is comparatively seldom seen. A distinction must be made between a chronic bronchitis which follows an acute attack, and that form of bronchitis which is chronic from the start. The prolongation of an acute bronchitis, which "hangs on," as the saying is, yields readily to treatment and need not detain us here. Far different, however, is the chronic bronchitis of the middle aged. They begin to cough as winter begins, cough all winter, and gradually recover as good weather appears the following spring. For these patients much can be done by proper treatment. Attention should be paid first to their mode of life and their dietary habits. They should live in well ventilated quarters, the dry heat of which is to be corrected by a water vaporizing apparatus. Many of these patients wear too much clothing in the house and too little when they go out, and these errors must be corrected. Their diet should be simple and nutritious; tea, coffee, and meats are to be used sparingly. That oft quoted aphorism, "The patient should be treated, and not the disease," is more true in chronic bronchitis than

perhaps in any other disease. These patients are all overmedicated. They take home remedies of every description and are regular patrons of the druggist's bargain counter of cough mixtures. In placing one of these cases under treatment it is well to insist that all use of remedies other than those prescribed be suspended. The patient should be thoroughly examined to determine whether the heart, stomach, liver, kidneys or intestines by imperfect functioning are contributing to the persistence of the diseased condition in the bronchi. The nose and throat also must be examined, and any abnormality therein found corrected. Having eliminated all accessory conditions, there remain a large number of patients in our northern cities and towns whose bronchitis appears to be due to the irritation of a cold, damp, smoke laden atmosphere, acting upon a bronchial mucous membrane whose resistance is diminished as a result of the changes of advancing age. This is proved by the immediate relief obtained by these patients if they are sent to the arid Southwest for the winter. This is really the best treatment for this class of cases, but, unfortunately, it is impossible in the great majority of our patients.

As to medication, there is but one drug that is of any use in the treatment of chronic bronchitis and that drug is potassium iodide. It may be prescribed in solution, with some excipient to partially disguise its unpleasant taste, in dose of from five to ten grains after each meal and well diluted with water. Or it may be prescribed in pill form if its taste is seriously objected to. Many patients find the iodide hard to take and will discontinue it before giving it a fair trial unless urged to do so. In the dry form of bronchitis, with an irritable, nonproductive cough, this drug stimulates secretion and allays the irritation and feeling of constriction in the chest. The cough "loosens," expectoration becomes abundant, and gradually both cough and expectoration diminish and disappear. In cases where a profuse expectoration is present, the secretion becomes less tenacious and less foul, diminishes gradually in amount, and disappears.

When the improvement has become marked, the patient should be instructed to discontinue the medication for a time, to resume it, however, at once upon the occurrence of any chest symptoms. While not taking the iodide many of these patients should take a little iron, as they are anemic on account of the long continued suppuration within the bronchi. Any sufferer from chronic bronchitis who cannot be carried comfortably through the winter on the above indicated treatment should be advised to make a permanent change of residence, and that preferably to the semiarid Southwest.

Dr. Gustavus Eliot, of New Haven, Conn., contributes the following:

The cough of chronic bronchitis is often made worse by going into the cold air. This suggests the desirability of sending a patient with this disease to a climate which is warm. It is generally more beneficial if it is also dry, and not liable to extensive variations of temperature. If a change of climate is impracticable, the patient should be protected from exposure to cold. He should be kept in a house the air of which is maintained at an even, warm temperature, and which is kept pure and fresh by suitable ventilation. If he has fever he should be kept in bed.

Before prescribing any medicine for the bronchitis the physician must assure himself that his patient has not tuberculosis, and that the cough is not perpetuated by some reflex cause, such as hypertrophied tonsils or uvula, or by some toxemic condition such as may accompany nephritis, or functional disorder of the liver.

The cough is usually the most obvious disturbing symptom, and any satisfactory treatment of the disease must effect early diminution of this symptom. The most useful of all drugs for the control of cough is opium. The most effective preparation of opium is, of course, morphine, but its use should be avoided, or continued only for a very short time, on account of the danger of developing the opium habit. Codeine is far safer, and is usually sufficiently effective. With it should be combined a small amount of ipecac, which promotes the secretion of the glands of the bronchial mucous membrane, lessens the reflex irritability which favors the cough, tends to counteract any disturbing effect which the codeine may have upon the digestive organs, and also renders the dose of the mixture less likely to be increased by the patient on his own initiative, in order to get more of the effect of the codeine, because an increase in the dose of the ipecac will usually cause nausea. To these should be added ammonium chloride, which has a sedative action on the bronchial mucous membrane, renders the catarrhal secretion less viscid, and assists in restoring the mucous membrane to a healthy condition. In order to modify its pungent taste glycerin and one of the syrups may be added, as in the following prescription:

℞ Ammonii chloridi, ...ʒiv;
Syrupi ipecacuanhæ, ...ʒii;
Codeinæ sulphatis, ...gr. viii;
Glycerinæ, ... } .....āā ℥i;
Syrupi sarsaparillæ compositi, }
Aquæ q. s. ad.....ʒiv.

M. Sig.: Take one teaspoonful, in half a tumblerful of water, after each meal, and repeat after two hours.

This prescription may be modified to suit the individual case. It will benefit the bronchitis and will not injure the digestive organs.

If there is any fever, if the patient is debilitated, if the pulse is weak and rapid, quinine should be given with digitalis. The former frequently has a beneficial action in all forms of inflammation of the respiratory organs; the latter strengthens the action of the heart, and assists in overcoming local congestion. The following is a useful prescription:

℞ Extracti digitalis, ...gr. x;
Quininæ sulphatis, ...ʒi.

M. Divide in capsulas xx.

Sig.: Take one capsule, three times a day, one hour after eating.

If the patient is constipated a small amount, from one tenth to one half of a grain, of purified aloes should be added to each of these capsules.

If the pulse is weak but slow, one fortieth of a grain of the sulphate of strychnine should be substituted for the digitalis.

If the infectious element of the disease seems to

predominate over the inflammatory element in any patient, a creosote mixture should be substituted for the ammonium mixture, as in the following prescription:

℞ Creosoti carbonatis. .....ʒss;
Acaciæ, ...ʒss;
Syrupi, ...ʒiii;
Aquæ cinnamomi, q. s. ad.....ʒvi.
M. Sig.: Shake. Take one dessertspoonful every two hours.

If one hopes to secure an antiseptic action from the creosote, he must not give too small a dose, or repeat it at too long an interval.

If the cough is not very troublesome, but does not entirely disappear, and if the patient is debilitated and emaciated cod liver oil is often very useful. A good preparation of the pure oil may be prescribed in tablespoonful doses, to be taken two hours after eating, or an emulsion may be prescribed:

℞ Olei morrhuæ, ...ʒviii;
Acaciæ .....ʒii;
Olei gaultheriæ, ...gtt iv;
Syrupi, ...ʒiv;
Aquæ. .....ad ʒxvi.
M. Sig.: Take one tablespoonful three times a day, two hours after eating. The syrup of calcium hypophosphite may sometimes be advantageously substituted for the syrup in this prescription.

Often slight counterirritation to the chest is of considerable benefit. A liniment containing turpentine is useful for this purpose, as in the following prescription:

℞ Olei terebinthinæ, ... }
Linimenti saponis, .. } .....āā ʒii.
Linimenti camphoræ, }
M. Sig.: Shake. Rub thoroughly upon the front and back of the chest at night and in the morning.

The practice of taking a series of deep inspirations and forcible expirations, repeated several times a day, which has in recent years been condemned by distinguished phthisiotherapeutists, is theoretically less objectionable in chronic, nontuberculous, bronchitis. It should be advised after the expectoration has become not profuse, and should be continued until complete recovery has followed.

Dr. Thomas W. Maloney, of Geneva, N. Y., states:

Chronic bronchitis is for the greater part a secondary affection. It is met with in association with chronic lung affections, heart disease, aneurysm of the aorta, gout, and renal disease. Undoubtedly the most important exciting factors are climate, season, and habit.

It seems needless, but hardly out of place, to state that any attempt at local treatment will be unsatisfactory while any causative factor is overlooked or disregarded.

The obstinate chronic bronchitis in the middle aged is usually characterized by paroxysmal coughing, with little or no expectoration. Often there is a feeling of substernal constriction, which the coughing at first increases and then diminishes. This relief is comparable to that which succeeding doses of a drug bring to the habitué, and is a factor in the chronicity of the affection.

The treatment of chronic bronchitis must be directed along other lines than medicinal if one would hope for success. Suggestion on the part of the tactful physician and mental discipline on the part of the patient will do more than drugs to relieve this disagreeable symptom. To suggest to a patient that habit has a great deal to do with the continuance of the coughing spells may precipitate a few consultations of a stormy character, but the effect on the patient's mind will be a benefit, and perhaps lay the foundation for permanent relief. There can be no question that there is much more coughing than is necessary. It may be said that a cough which is not productive is unnecessary. I have found that the suggestion that lung damage results from coughing and that all unnecessary coughing weakens the resistance of lung tissue to later changes is beneficial. It requires a nice judgment in the selection of cases where this form of treatment may be used alone, but it surely is not out of place, even when used in conjunction with other measures. Impress on the patient that the symptom will take some little time for permanent relief or cure. This will often do much toward better control of this class of patients.

We cannot direct the rank and file of our patients to winter along the southern seacoast or in the lands of pine, but to those who can afford the time and money, a winter sojourn in Southern California or Florida will either prevent or greatly ameliorate a symptom which a cold and changeable climate appears to make inevitable.

Woolen underwear should be advised in all seasons. It is my custom to order four different weights of woolen underwear during the year, that the change from season to season may be gradual. Half wool is suitable and comfortable for the summer. It is not so necessary for the patient to wear heavy and uncomfortable outer clothing.

Internally drugs avail little. Potassium iodide in ascending doses appears to benefit obscure cases. Of course, luetic cases should be saturated with this drug. Tuberculosis is a contraindication.

Hydrotherapy does good if it can be controlled. I find it is easier to follow out cold morning sponges if the habit is begun during the hot weather. The change in the temperature of the water as the cold weather approaches is not then so noticeable. Tap temperature is easiest to prescribe and will be followed better than if the patient is put to the inconvenience of tempering the water.

(To be concluded.)

Therapeutic Notes.

Use of Iodine Vapors in Otology.—E. Chapellier, in *Archives générales de médecine* for September, 1912, reports good results from blowing iodine vapor into the tympanic cavity in a case of chronic otitis media in which the mastoid had been opened, but discharge of thick pus continued through the meatus. The apparatus used consisted simply of an ordinary flat ink bottle, provided with a perforated cork through which were passed two short glass tubes, one connected with an atomizer bulb and the other leading through a rubber tube to a small curved cannula. Before use, a small quantity of iodoform was placed in the bottle, and the tip of a thermocautery (or wire heated in a flame) brought near the iodoform to set free iodine

fumes from it. The cork with the two tubes was then inserted, and the tip of the cannula pointed toward the aditus and the iodine fumes blown into the tympanic cavity. Previous to the insufflation, the meatus and mastoid wound were cleansed, the passages cleared—by the Valsalva method—and the wound and meatus again wiped out. After the insufflation further cleansing was practised and sterile gauze inserted in the canal and wound.

In a few days the purulent discharge rapidly diminished. First, it became serous, remaining thus for three days; then only a small drop of fluid collected on the gauze in the meatus. Next, the tympanum underwent rapid resolution, and dressing of the mastoid wound could be carried out in the usual effective manner.

An attempt had previously been made to pass tincture of iodine into the tympanum in this case, but the discharge, instead of diminishing, had increased. The iodine vapor, however, by virtue of its great diffusibility, and with the help of the Valsalva procedure, unquestionably reached the tympanic cavity, as the patient tasted and smelled the iodine. The insufflations were given daily.

Treatment of Streptococcic Skin Lesions.—Sabouraud, in *Paris médical* for March 1, 1913, recommends that in intertrigo diluted tincture of iodine be applied daily:

℞ Tincturæ iodi, ...ʒiiss (10 grammes);
Alcoholis (80 per cent.), ...℥iii (100 grammes).
Misce.

This preparation causes local burning, but the latter lasts only a few minutes. The affected area should next be covered with the following ointment, and finally talcum powder dusted over it:

℞ Zinci oxidi, ...gr. xlv (3 grammes);
Petrolati, ...ʒv (20 grammes);
Adipis lanæ hydrosi, } ...āā gr. lxxv (5 grammes).
Aquæ destillatæ, ... }
M. ft. unguentum.

The intertrigo will have disappeared in a few days, but as recurrence may unexpectedly take place, the treatment should be continued a few days longer than appears necessary.

Where there are fissures in skin, which is the seat of intertrigo, the following preparation will give excellent results if painted into each fissure before the iodine is applied:

℞ Aloes, ...gr. xv (1 gramme);
Myrrhæ, ...ʒss (2 grammes);
Balsami tolutani, }
Benzoini, ... } .....āā ʒiss (6 grammes);
Alcoholis (80 per cent.), ...℥iiss (75 c. c.).
Fiat tinctura.

If the impetiginous lesions are situated on open skin surfaces, instead of in the folds, Sabouraud washes them two or three times a day with the following solution, which may be used either pure or diluted one half:

℞ Cupri sulphatis, ...gr. xv (1 gramme);
Zinci sulphatis, ...ʒss (2 grammes);
Spiritus camphoræ, ...ʒiss (5 grammes);
Aquæ destillatæ, ...℥x (300 grammes).
Fiat lotio.

Zinc oxide ointment should be applied without fail before retiring, as it tends to overcome the effects of excessive astringency on the part of the lotion.

In rupial lesions infected with streptococci the same lotion may be used for detergent purposes, but the ulcers heal more rapidly under a 2.5 per cent. ointment of ferrous carbonate. Once daily the ointment should be washed off with a little sterile oil and then renewed.

In impetiginous lesions of the fingers loose portions of the horny epidermis should be removed with scissors before each dressing, and the hand and fingers should be bathed in the copper and zinc solution already referred to, diluted one half.

Treatment of Tuberculosis.—John Laird, in the *British Journal of Tuberculosis* for January, 1913, is credited with a formula constituted essentially as follows:

℞ Sodii iodidi, ...ʒss (2 grammes);
Sodii benzoatis, ...ʒiii (12 grammes);
Liquoris potassii arsenitis,.....ʒss (2 grammes);
Syrupi aurantii, ...℥i (30 grammes);
Aquæ chloroformi, q. s. ad....℥viii (250 grammes).
M. ft. solutio. Sig.: One teaspoonful in water three times a day.

The preparation may be taken either before or after meals, according to indications. It should be administered for a prolonged period, with occasional intermissions for a few days. Should anemia be marked the citrate of iron and ammonium can be added to the mixture. The maximal dose of the latter for adults is two drachms.

Treatment of Urethritis Due to Micrococcus Catarrhalis.—L. Buck, in *Northwest Medicine* for November, 1912, reminds us that, as shown by Ayres, the *Micrococcus catarrhalis* is the cause of a number of cases of so called gonnorrhea. This germ can be differentiated with certainty from the gonococcus only by culture, but the resulting urethritis is different in that recovery takes place rather readily if local treatment is limited to the use of mild remedies or entirely omitted, while the more energetically the condition is treated the more stubborn it becomes. In general, a urethral discharge occurring within five days after exposure, though showing diplococci, is not gonorrheal unless it represents a return of trouble in an uncured gonococcal case.

The treatment of the catarrhalis urethritis should include the giving of large doses of santal oil or Lafayette mixture internally. The formula of this mixture is as follows:

℞ Copaibæ, ...
Tinturæ lavandulæ compositæ, }
Spiritus ætheris nitrosi, ... } ...āā ʒiii (12 c. c.);
Liquoris potassii hydroxidi, ...♏l (3 c. c.);
Syrupi, ...℥i (30 c. c.);
Mucilaginis acaciæ, q. s. ad.....℥xxv (100 c. c.).
Fiat mistura.

No local treatment should be given at first, but if after a week or ten days the discharge still persists, irrigations may be begun with a 1:32,000 silver nitrate solution (1 grain to 4⅔ pints) and no stronger. The newer silver salts should not be used, as they seem to aggravate rather than benefit the condition; if they are used, the solution should be very mild. If any complication appears, local treatment should be stopped and ten grains (0.6 gramme) of hexamethylenamine given three times a day. L. W. Hyde has used a catarrhalis vaccine with satisfaction in two cases.

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FRIEDMANN'S PREPARATION.

Assuming the correctness of the newspaper statements concerning the recent developments in regard to Friedmann's preparation, it is evident that the question of the sale of this product has entered upon a new stage. Hitherto its use in this country has been restricted to trials in certain hospitals and its administration by Friedmann himself to certain private patients in Rhode Island, where he seems to have been permitted to practise. Now it is announced that the rights to the use of the preparation have been secured by a drug house and that it is the intention to establish "Friedmann Institutes" in thirty-six States. In this way the necessity of obtaining the license which is required by the federal government in the case of concerns desiring to engage in interstate commerce in such products is obviated. Any control over Friedmann's preparation must henceforth be exercised by the individual States; not only is there no federal statute which applies, but it is difficult to see how under our present constitution it would be possible to formulate a statute which would cover such a case. The most that the federal government could do would be to act in an advisory capacity; this the Bureau of Public Health has been doing, but it has been greatly handicapped by the secrecy which Friedmann maintains in respect to his alleged cure and by his apparent unwillingness to cooperate. At one time it was reported that certain firms were waiting for a favorable report from the Bureau of Public Health before undertaking to finance the project; such a course would have been more creditable than the one now adopted.

As to the value of the preparation itself, the medical profession is still as much in the dark as it was when Doctor Achard made his report nearly three months ago (NEW YORK MEDICAL JOURNAL, February 15, 1913); it still has only the unsupported word of Friedmann himself and the latter's methods of exploitation, which are so much at variance with what we are accustomed to expect from a member of our profession that they have not tended to increase confidence in his alleged cure.

It will be interesting to see what action the various States will take in this matter; that they will be forced in the near future to adopt some policy in regard to products of this character is highly probable, for the methods adopted by Friedmann will almost certainly be pursued by others who claim to have curative vaccines, serums, etc., the nature of which they are unwilling to disclose by applying for a federal license. Friedmann's whole attitude is so degrading, and conflicts so utterly with the traditions of the American medical profession, that we may venture the hope that any policy adopted will serve once for all to defeat any attempt to obtain such privileges.

THE STATUS OF THE CANCER QUESTION.

In looking over the programme of the meeting of the Congress of American Physicians and Surgeons, one is struck by the fact that papers on carcinoma or malignant tumors appear in nearly every section. Besides, one of the societies present devoted its entire time to that subject. When any one topic appears for discussion from so many different aspects it generally indicates one of two conditions. Either it is new and relatively infrequent, or else it is old and widespread. In this instance the latter holds true, and there is added the fact that as yet comparatively little has been done in the way of combating the condition. Consequently, the energies of hundreds of men are being expended in attempts to find the cause and to effect a cure whatever that cause may be.

What has been accomplished along either of these lines? Are we any nearer an understanding of the problem now than fifty years ago? It would seem that we are. The work of many indicates that there is what might be termed a precancerous condition, one that can be experimentally produced. To this,

as one more link in the chain, can be added the evidence that chronic irritation is in many cases essential. Very recently Ryall has pointed out the frequency of cancer of the tongue in those who have had syphilis, over eighty per cent. giving a specific history. Example after example has been added to the list of chronic irritative changes that precede the development of malignant disease. It will therefore be noted that at the above mentioned meeting much has been said concerning prophylaxis, and those toward whom this was mainly directed are the women, particularly those who have borne children. Many papers also were read the theme of which was the treatment and cure of cancer, and here comes up the question of diagnosis. Unfortunately, there has as yet appeared no method other than microscopical examination that has been of any assistance. Immune reactions with serum have been attempted, but have proved of no use. The blood has been examined for the presence or absence of many substances, but unsuccessfully. At present there is no way of telling what it is that one is dealing with. Although no means of early diagnosis other than the microscope is known, the outlook for the sufferer is not the gloomy one that so often obtrudes. Many cases of cancer can and have been cured. All sorts of schemes have been attempted, everything from a poultice of crushed violets to surgical interference, but it is the latter alone that promises anything. Even if the cause has not been found we must not feel that the outlook is hopeless. It may be that all kinds of parasites have been blamed, but what interests the patient is the method that will cure. Consequently, while the laboratory worker is busy with his research, the man in the fighting line must be constantly exerting himself to get his cases earlier, which means at a time when complete removal is possible. There seems little doubt that cancer is primarily a local condition and as such can be handled readily. To wait, however, means to court disaster.

THE OPHTHALMOLOGIST AS A CONSULTANT.

The value of the services of a consultant does not depend wholly upon his ability to recognize and name certain lesions in a certain organ, although this is essential, but to a very great degree on his capacity to show the connection of those lesions with other symptoms of the disease from which the patient is suffering, and thus to aid in the establishment of a differential diagnosis. So far as an ophthalmologist is lacking in the power to group ocular with other symptoms, he is deficient as a specialist and as a consultant. These thoughts, which may not be *mal à propos* in view of the present agitation for a special training for ophthalmologists, are suggested by the report of a case of cerebellopontine tumor made by C. A. Veasey in the *Ophthalmic Record* for March. Three years before death Doctor Veasey, in consultation found the patient to have choked disks, intense occipital headache, nausea, vomiting, ataxia, deafness, and tinnitus of the right ear with dizziness and vertigo, not explained by any condition of the conducting mechanism, paresis of the right abducens and facialis, and a great loss of function of the right trigeminus. Now, the only place where pressure can produce all of these symptoms simultaneously is the right cerebellopontine angle, and the diagnosis was made of a tumor in that location. The patient declined the only effective treatment, went to another doctor, and had other consultants. Some operation is said to have been performed in vain on the nose to relieve the symptoms, and later another oculist found optic atrophy, which he thought had been caused by a tumor of the brain, but he could detect no localizing symptoms. The patient died, and was found on autopsy to have a tumor exactly where it had been located three years before. How was it that the other consultants failed to find the localizing symptoms? The pareses of the fifth, sixth, seventh, and eighth cranial nerves caused by the pressure of the slowly growing tumor could not have disappeared; they must have been overlooked, or else their bearing on the case was not appreciated. Men differ much in their powers of observation, so it may be possible for one not to notice a right sided facial paresis with loss of sensation, a paresis of the right external rectus, and labyrinthine deafness of the right ear, but it seems more probable that, while these conditions were observed, it did not occur to the examiners to group them together with the other conditions for the purpose of making a diagnosis.

The great privilege of a specialist is that he is able to assist his colleagues in the diagnosis of obscure diseases from the resources of his superior knowledge concerning the diseases of a certain organ and the reciprocal relations they bear to diseases of the general organism. Other practitioners have a right to expect such knowledge from him if he poses before them as a specialist. A diagnosis is not made by tagging the lesion seen with an appropriate name, such as optic neuritis, chorioiditis, or retinitis, but can be made only by tracing the connection of the lesion with the disease that affects the organism as a whole, and here is where the true specialist proves himself an efficient consultant. A real specialist in diseases of the eye needs a work-

ing knowledge of the adjacent organs, like the nose and accessory sinuses; he must be something of a neurologist, to trace cause from effect on various nerves which may suffer from lesions that simultaneously affect those that supply the eye, and he must have a living knowledge of the effects produced in the eye by various diseases of other organs of the body. Adam brings this out strongly in his *Ophthalmoscopic Diagnosis,* in which he makes the pertinent query: "What is to be expected from an ophthalmologist who is called into consultation over a patient having a high fever without characteristic symptoms, in whom the diagnosis needs to be made between typhoid fever, miliary tuberculosis, tuberculous meningitis, and sepsis?" Granted that his aid is less needed in such a case as this than it was before the days of Widal's reaction and the tuberculin test, the fact that scattered hemorrhages in the retina would mark it as one of sepsis, an optic neuritis as one of tuberculous meningitis, and scattered white spots in the fundus as one of miliary tuberculosis, serves to illustrate the point that the ophthalmologist needs to be thoroughly well posted in general medicine to be an efficient consultant. His thought must be centred on the eye, but must extend beyond the anatomical boundaries of that organ, along the lines that join it to the other organs of the body, until it grasps the truth of interdependence and perceives the reciprocal relations that govern the eye as a part of the organism. If he confines his attention within the anatomical limits of the eye he never learns this relationship as a whole, no matter how skillful he may become in certain details, but remains narrow and ignorant of an extremely important part of his specialty, gains no diagnostic acumen, and proves an inefficient, if not dangerous, consultant.

THE SENATE AND THE AMENDMENT TO THE PRACTICE OF NURSING ACT.

Elsewhere in this number we submit the report of the commission appointed at the request of the management of the Chautauqua School of Nursing to determine the character of the work done by that school and whether its graduates serve a useful purpose to the medical profession and to the suffering public. Our readers are referred to the report itself for the details of the inspection and for the conclusions reached. It may be mentioned here that the commission started its labors somewhat prejudiced against any method of teaching nursing which did not include hospital training, but that the inspection of the Chautauqua school convinced them that, conscientiously conducted and supervised, home study—in keeping with considerable teaching in other directions carried out by the University of Chicago, for instance—could serve an exceedingly useful purpose in the field of nursing, precisely as it did in other branches.

A feature among others thoroughly emphasized by the report is that the proposed amendment to the Nurses' Practice Act, through which nonhospital nurses would eventually have been debarred from practice, would, if adopted, have worked havoc with the large proportion of people in New York State who cannot pay twenty-five dollars a week and over for nursing. The Senate, in accord with our commission and with practically the entire medical profession and the medical and lay press of the State, has evidently deemed the proposed amendment harmful to public welfare. Indeed, the bill encountered such decisive opposition that it had to be amended and reprinted several times until divested of its obnoxious clauses.

What remains of the original bill, if it is ever adopted in its present form, is that hospital trained nurses will alone have the right to call themselves "trained, graduate, certified, or registered nurses." This will hardly prove as advantageous to them as the amendment suggested by our commission, that nurses be required to print on their cards, charts, etc., the hospital, school, etc., in which they had been trained, since this plan would insure the hospital trained nurse due recognition, while enabling physicians to identify those institutions which gave their students a thorough training from those which did not. Still, as matters stand, the harmful effects of the ill advised amendment proposed by the New York State Nurses' Association have been prevented through the watchfulness of the Senate, an act for which it is entitled to the congratulations of the medical profession and of thousands of bedridden and helpless sufferers.

INADEQUATE DIRECTIONS AS TO DOSE.

From two such widely separated points as Vienna and Niagara Falls comes confirmation of the importance of writing out in full directions for taking, and of the danger involved in substituting for such instructions the phrase "as directed." Dr. Hans Arzberger, of the Vienna General Hospital, in an address before the Vienna Therapeutical Society, points out the fact that the substitution of the term "as directed" for the instructions as to dose makes it impossible for the pharmacist to draw deductions which will aid him in deciphering doubtful prescriptions, and thus removes an important safeguard. In Niagara Falls a patient was killed by the substitution of guaiacol for glycerol, and one of the excuses put forward by the dispenser was

that the phrase "take as directed," which was used in place of the directions for taking, gave no clue to the dose. Our repeated references to the danger involved in failure to write out the full directions are justified by the repetition of errors of this kind, which probably would not have been made had the directions been written out on the prescription.

A RASH FROM VENICE TURPENTINE.

Venice turpentine, a thick, resinous preparation with an acrid taste, seems to be a popular remedy in Great Britain for colds and for the pain in the back that quacks ascribe to kidney disease. Dr. William Angus communicates to the *British Medical Journal* for April 5, 1913, a short account of a patient who was sent to him by his medical adviser as suffering probably from scarlet fever, as he presented over the entire body a vivid, scarlet, punctate rash, as well as marked redness and mottling of the fauces. Doctor Angus attributes the rash, which soon faded away without further symptoms or desquamation, to the Venice turpentine which the patient had been taking for a "cold." The slight rise in temperature which was noted was due probably to this slight ailment.

Obituary.

FRANCIS PARKER KINNICUTT, A. M., M. D., of New York.

Dr. Francis Parker Kinnicutt died suddenly on May 2nd, at a monthly meeting of the Practitioners' Society held at the house of one of the members. Doctor Kinnicutt went to the meeting in good health, but while there was seized with a sudden faintness and died a few moments later. Born in Worcester, Mass., on July 13, 1846, Doctor Kinnicutt graduated from Harvard in 1868 as A. B., receiving the title of A. M. in 1872. After a three years' course at the College of Physicians and Surgeons, of New York city, he received, in 1871, his diploma as doctor of medicine. For two years he took a postgraduate course at Heidelberg and Vienna and then returned, in 1875, to New York, where he settled as practitioner. Since 1893 he had held the chair of clinical medicine at the College of Physicians and Surgeons. Doctor Kinnicutt was connected with the Presbyterian Hospital, St. Luke's Hospital, Woman's Hospital, Hospital for the Ruptured and Crippled, and many others. He also took an active part in civic life, and thus was a member of the advisory board of the commissioner of health of New York city; of the advisory board of the port offices of the State of New York, etc. From 1885 he was, together with Dr. N. B. Potter, editor of the English translation of Sahli's Clinical Diagnosis. In 1907 he was president of the Congress of American Physicians and Surgeons. Doctor Kinnicutt was a member of the New York Academy of Medicine and many other societies, and was a charter member of the Medical Association of the Greater City of New York. Admired by his friends and fellow practitioners, his loss will be greatly felt.

News Items.

Change of Address.—Dr. C. A. Wilson-Prévost, to The Wyoming, Fifty-fifth Street and Seventh Avenue, New York.

Meetings of Philadelphia Medical Societies.—During the coming week meetings of medical societies will be held in Philadelphia as follows: Monday, May 12th, Samaritan Hospital Medical Society; Tuesday, May 13th, Pediatric Society; Wednesday, May 14th, County Medical Society; Thursday, May 15th, County Medical Society, Northeast Branch; Friday, May 16th, Jefferson Hospital Clinical Society and the County Medical Society, Southeast Branch.

A Merger of Medical Colleges on the Pacific Coast.—It is reported that the Medical Department of Willamette University, Salem, Ore., has been merged with the medical department of the University of Oregon, Portland, the merger to take effect at the conclusion of the present college year. There will be hereafter only one medical college in the State, the medical department of the State university.

Philadelphia County Medical Society.—At a meeting of the West Branch of this society, to be held on May 20th, Surgeon General Stokes, United States Navy, will be present and deliver an address. After the meeting a reception will be held in honor of Doctor Stokes. The profession in general is invited, and those who wish to attend should communicate at once with the chairman of the committee, Dr. George Knowles, 4812 Baltimore avenue, Philadelphia.

Northern Medical Society.—The following programme has been arranged for the next meeting of this society, which will be held at 12 Mount Morris Park West, on Monday evening, May 19th, at 8:45 o'clock: Presentation of ophthalmological cases, by Dr. Otto Schirmer; presentation of cases of pituitary disease, by Dr. DeWitt Stetten; a paper on the Successful Treatment of Vulvovaginitis in Young Children, by Dr. Nathaniel Barnett; and a paper on Should Venereal Disease Be Reported to the Board of Health, by Dr. William J. Robinson. A general discussion will follow the reading of the papers. Members of the medical profession are invited to attend.

Investigation into the Radium Treatment of Cancer.—The effect of radium in the treatment of cancer is to be made the subject of a special investigation under the direction of Dr. William Duane at the Harvard Medical School. For the present the experiments will be conducted in the Collis P. Huntington Building, but as soon as possible a special building is to be constructed adjoining the medical school and devoted entirely to the work of radium investigation. Doctor Duane has studied in the laboratory of Madame Curie, in Paris, and has been in touch also with the work of the Radium Institute in London. The investigation is to be made under the supervision of the Cancer Commission of Harvard. Dr. E. E. Tyzzer is director of the commisssion.

Society for Medical Gymnastics and Massage.—This society, which was organized in New York less than a year ago, has decided to open a clinic for the treatment of patients. The site of the proposed clinic has not yet been decided upon, but it is expected that one will be chosen in time to open the clinic in August or September. It will be under the supervision of the medical advisory board of the society, and only those patients will be treated who present a prescription from a duly licensed physician stating the particular treatment required. The policy of the new society is to employ only those persons who thoroughly understand the application of medical gymnastics and massage, and to put this form of therapeutics under the supervision of the medical societies of the State.

American Medical Editors' Association.—The annual meeting of this association will be held in Minneapolis, Minn., on June 16th, with headquarters at the Hotel Radisson. An interesting programme has been prepared, on topics of journalistic as well as general interest. The annual banquet will be held at the Hotel Radisson on the evening of the 16th. The officers of the association are: President, Dr. Thomas L. Stedman, of New York; first vice-president, Dr. E. A. Van der Veer, of Albany, N. Y.; second vice-president, Dr. George Strobach, of Cincinnati; secretary and treasurer, Dr. Joseph MacDonald, Jr., of New York. The Executive Committee is composed of Dr. O. F. Ball, of St. Louis, Dr. W. A. Jones, of Minneapolis, and Dr. Finley Ellingwood, of Chicago.

Louisiana State Medical Association.—At the twenty-fourth annual meeting of this society, held in Baton Rouge on April 22d, 23d, and 24th, under the presidency of Dr. B. A. Ledbetter, the following officers were elected to serve for the ensuing year: President, Dr. Fred J. Mayer, of Opelousas; first vice-president, Dr. Allen J. Perkins, of Lake Charles; second vice-president, Dr. A. H. Gladden, of Monroe; third vice-president, Dr. William S. Rutledge, of Rushton; secretary, Dr. L. R. De Buys, of New Orleans; assistant secretary, Dr. George Augustin, of New Orleans; treasurer, Dr. E. W. Mahler, of New Orleans. Dr. John G. Martin, of Lake Charles, and Dr. W. G. Owen, of White Castle, were elected members of the State Board of Medical Examiners. Next year's meeting will be held in New Orleans.

Doctor Tyson Honored.—In recognition of his work as a practising physician for more than fifty years, Dr. James Tyson, emeritus professor of medicine in the University of Pennsylvania, was the guest of honor at the annual banquet of the Northern Medical Association of Philadelphia, held on the evening of April 30th. More than fifty physicians were present. Dr. Thomas Shriner presided as toastmaster, and among those who responded to toasts were Dr. John B. Deaver, who spoke of the University of Pennsylvania; Dr. William T. Robertson, who told of the work of Temple University; Dr. J. M. Anders, whose topic was the Medico-Chirurgical College; Dr. F. X. Dercum, who spoke of the work of Jefferson Medical College, and Dr. Albert Bernheim, whose topic was the medical teachers of Philadelphia.

New York Society of Anesthetists.—A meeting of this society will be held in the New York Academy of Medicine on Wednesday evening, May 14th, at 8:15 o'clock. Dr. Joseph Marshall Flint, professor of the theory and practice of Surgery, Yale University, will read a paper on Pharyngeal Anesthesia, and will exhibit an apparatus for pharyngeal anesthesia and insufflation. Dr. William Branower will demonstrate a combined pump and suction apparatus for anethesia in oral surgery, and the lungmotor will be exhibited. Dr. Charles J. Pick will present a paper on Ethyl Chloride Anesthesia, which will be followed by a general discussion. The officers of this society are: President, Dr. Joseph E. Lumbard, of New York; vice-president, Dr. F. W. Pinneo, of Newark, N. J.; secretary and treasurer, Dr. Harold A. Sanders, of Brooklyn; librarian, Dr. William C. Woolsey, of Brooklyn.

Women's Medical Society of New York State.—The seventh annual meeting of this society was held in Rochester on Monday, April 28th, under the presidency of Dr. Helen J. C. Kuhlmann, of Buffalo, with headquarters at the Hotel Seneca. About one hundred women physicians from various parts of the State attended the meeting, which was one of the most successsful ever held by the association. The following officers were elected to serve for the ensuing year: President, Dr. Marion Craig Potter, of Rochester; first vice-president, Dr. Angenette Parry, of New York; second vice-president, Dr. Emily Dunning Barringer, of New York; third vice-president, Dr. Eveline P. Ballantine, of Rochester; secretary, Dr. Sarah Gardner Pierson, of Rochester; treasurer, Dr. Edith R. Hatch, of Buffalo. At the annual banquet of the society, which brought the meeting to a close, Dr. Grace Peckham Murray, of New York, presided as toastmistress.

Sixtieth Anniversary of the Sheppard and Enoch Pratt Hospital.—The celebration of the sixtieth anniversary of the granting of the charter to the Sheppard and Enoch Pratt Hospital by the legislature of Maryland took place on Thursday, Friday, and Saturday, May 8th, 9th, and 10th. On Thursday afternoon, Mr. George A. Pope, president of the board of trustees, delivered the address of welcome, which was followed by an interesting historical address by Dr. Edward N. Brush, superintendent of the institution. Dr. Edward D. Fisher, professor of nervous and mental diseases, University of Bellevue Hospital Medical College, New York, read a paper on the Present Position of the Asylum as an Education Factor in Medicine, and Dr. William Rush Dunton, Jr., presented a paper on the Work of the Hospital. After an inspection of the hospital, a buffet luncheon was served. Thursday evening and Friday afternoon were devoted to the presentation of scientific papers, and on Saturday the exercises were brought to a close by a bazaar for the sale of the work of the handicraft classes and field sports.

Associated Outpatient Clinics Organize a Department for Venereal Diseases.—A section in genitourinary, skin, and syphilitic clinics has been formed by the Associated Outpatients Clinics, as a result of the symposium on hospital and dispensary facilities for the treatment of venereal diseases, which was presented at a stated meeting of the New York Academy of Medicine last February. This section, which acts in an advisory capacity to the association, has already formulated a set of recommendations with regard to the treatment of syphilis, and at its second meeting, to be held next Tuesday evening, at 8:15 o'clock, in Room 40 of the New York Academy of Medicine, recommendations with regard to the treatment of gonorrhea and chancroid will be considered, and circulars of instruction for patients, as well as history cards, will be adopted. The association will in all probability endorse all the forms and recommendations presented by the section, thus bringing about a uniform method of keeping histories and giving instructions, with a resultant higher standard of equipment and therapeutics.

Civil Service Examination for Physician (Male) in the Public Health Service.—The United States Civil Service Commission announces an examination, on June 4, 1913, at various places throughout the United States, from which to secure a list of persons eligible to fill vacancies in the position of physician as they may occur in different branches of the service. It is expected to make certification immediately for filling vacancies in the Isthmian Canal Service, at initial salaries of $1,800 a year, and a vacancy in the position of acting assistant surgeon in the United States Public Health Service at Jacksonville, Fla., at a salary of $500 a year. Appointees to this position are required to devote only part of their time to the government service. The scope and character of the examination, as well as the requirements for the different branches of the service and the salaries of each, are contained in section 1912 of the Manual of Examinations for the Spring of 1913. Persons who desire to take this examination should apply at once to the United States Civil Service Commission, Washington, D. C., for either Form 1312 or B. I. A. 2 and a copy of the manual, and for further information regarding the examination.

Personal.—Dr. William H. Welch, professor of pathology at Johns Hopkins Medical School, has been elected president of the National Academy of Sciences for a term of six years.

Sir William Osler, regius professor of medicine at Oxford University, delivered the Silliman lectures at Yale University recently, his subject being the Evolution of Modern Medicine.

Dr. Fielding H. Garrison, of the Army Medical Museum, Washington, D. C., recently presented to the Johns Hopkins Medical School a portrait of the late Dr. Robert Fletcher, of the surgeon general's library, Washington, D. C.

Dr. John Berwick Anderson, of Waxahachie, Texas, Dr. Coleridge Livingstone Beaven, of Baltimore, and Dr. William W. Vaughan, of Washington, D. C., have passed the preliminary examination for appointment in the Medical Corps of the United States Army, and will be ordered to attend the next session of the Army Medical School in Washington, beginning October 1, 1913.

Dr. Ralston Lattimore, of Savannah, has been elected president of the Georgia Medical Association.

Dr. Charles T. Painter, of Boston, delivered a lecture on the Treatment and Training of Crippled and Deformed Children, at the Mechanics Institute, Richmond, Va., on the evening of May 9th.

Dr. William H. Cameron, of Pittsburgh, Pa., has been placed in charge of the commercial exhibit of the Medical Society of the State of Pennsylvania, at the annual meeting to be held next September.

Dr. John D. McGregor has been appointed city physician of Chicago.

Dr. Hugo Kinner, of St. Louis, has received a golden diploma from the University of Berlin. These diplomas are given to graduates of the University on the fiftieth anniversary of their graduation.

Miss Frances Margaret Harper has received a diploma in tropical medicine and hygiene, granted jointly by the Royal College of Physicians and the Royal College of Surgeons, of London. Miss Harper is the first woman to gain such a distinction.

Pith of Progressive Literature.

MEDIZINISCHE KLINIK.

March 2, 1913.

Pressure Oxygen Respiration for Resuscitating Asphyxiated Infants at Birth.—F. Engelmann describes a resuscitating apparatus consisting of the usual capsule containing oxygen, a water ventilator, and a somewhat modified Wantscher-Tiegel mask. The apparatus permits an even supply of oxygen under a determinable pressure for as long a period as is desired, and makes the not inconsequential and at times difficult catheterization of the trachea unnecessary. The method fulfils in a simple and harmless way the two most important requirements of a resuscitating therapy, namely, the unfolding of the lungs and the uniform supply of oxygen.

March 9, 1913.

Heredity in the Sane and Insane.—Ph. Jolly, making comparisons under homologous conditions, found that the number of those encumbered by hereditary influences among the insane was not much greater than among the sane, 64.5 per cent. as against 46.5 per cent. Contrary to the statement of Koller and Diem, a greater encumbering effect on the insane by the parents, and on the sane by remoter progenitors, could not be proved. The affective psychoses showed a larger percentage of hereditary effects than the other psychoses. The rôle of heredity in paralysis is questionable; among drinkers alcoholism and suicide were more prevalent in the family than was the case among the healthy.

Heart Blocklike Disturbance after Lumbar Anesthesia.—K. Vogel and A. Kraemer report the case of a man of seventy-five years who had enjoyed relatively good health up to the time of an uncomplicated operation for rupture. On account of the age of the patient and a chronic bronchitis, lumbar anesthesia with tropacocaine was practised, and after this there appeared the symptoms of a severe disturbance of the vagus, with bradycardia. Recovery, however, took place.

March 16, 1913.

Antiarthralgic and Antineuralgic Action of Adrenalin.—F. Gaisbock found that injections of adrenalin have a favorable effect upon the inflammatory joint processes; the neuralgic processes, like sciatica, also seem favorably influenced. Adrenalin, because of this pharmacodynamic effect, may thus be classed with the antineuralgics.

Influence of Diet upon Diseases of the Skin.—Hübner considers dietetic therapy a noteworthy factor in the treatment of skin diseases, especially in infants, the intestinal tract of whom is more readily affected by harmful substances than that of adults. Seborrheal eczemas appear chiefly in infants who are overfed and too fat, and such children often improve markedly as a result of reduction in the diet, especially as regards the proportion of fat in the food. The contention of Finkelstein that the injury is due to the salt content of the milk is not well founded. Regulation of the diet is not alone sufficient. The eczema must be treated locally, and the fear that many physicians entertain of "eczema death" for infants treated locally is groundless. In older children much can be accomplished by diet in urticaria, prurigo, and acne vulgaris. The ingestion of fats with low melting points (such as lamb) is to be interdicted. Patients with anal eczema should not be allowed highly seasoned foods. In adults no form of eczema, except the anal, can be much affected by influences from the gastrointestinal tract. The same may be said of psoriasis.

March 23, 1913.

Transplantation of Thyroid, Spleen, and Bone Marrow.—Kotzenberg decided to transplant thyroid gland tissue from a human subject (in this case from the mother of the patient) into the spleen and bone marrow in two cases of severe infantile myxedema which had not responded to internal treatment (the mothers of the children being employed for supplying the thyroid). The transplantation into the spleen, which has hitherto been considered somewhat dangerous on account of the hemorrhage, proved to be quite easy in consequence of operating at two different periods. The wounds closed normally. The functional result was satisfactory in the course of time.

March 30, 1913.

Alkali Treatment of Albuminuria.—W. Wieland says that in a great majority of the cases examined by him no effect on the albuminuria could be observed by the administration of alkalies. In a few instances there was a temporary, or even lasting, decrease of the albumin in the urine, but a causal relation between the alkali therapy and the cessation of albuminuria was not clear. In four cases very unpleasant side effects developed among the edema and uremic symptoms. Taken all in all, no good results should be expected from the use of alkalies in this class of cases.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT

March 4, 1913.

Prophylactic Serum Therapy in Tetanus.—K. Kolb and K. Laubenheimer report the case of an incised wound of the right hand, which is of interest because of the finding of the tetanus bacillus in the secretions of the wound a few days after the injury without the subsequent development of tetanus symptoms. The patient had been given at the time of his arrival in the clinic a prophylactic dose of tetanus antitoxine consisting of twenty units.

Which Forms of Pillar (Pfeiler) Resection Are to Be Recommended According to the Extent and Severity of Pulmonary Involvement?—Wilms gives the technical details concerning the different forms and extent of thoraplastic procedures according to the nature and dimension of the tuberculous involvement of the lungs. In the case of large, rapidly growing cavities, particularly in those with mixed infections, the author recommends opening of the chest toward the exterior.

Treatment of the Internal Injury of the Knee Joint.—O. Vulpius advises in recent injury to the meniscus, the replacement of this and immobilization for from five to six weeks. In chronic cases only can a radical operation do good. Before opening the joint an attempt should be made to replace

the meniscus by inflating with oxygen and to cause adhesions and healing in the correct position by the injection of a few drops of absolute alcohol between the meniscus and the capsule of the joint.

Specificity of the Protective Ferments.—E. Abderhalden says that the question of the serological diagnosis of pregnancy, discovered by himself, being specific, can in all probability be answered in the affirmative. In 200 cases there was only one wrong diagnosis which could not be explained etiologically. A definite answer to this question can be given only after the examination of a larger clinical material, which also takes into account nonpregnant women under pathological conditions. Unified results can be obtained only by following the minutest details in the method of examination. A detailed description of the method is given.

Danger of Infection after Abortions and Its Prevention.—Wolf-Eisner is of the opinion that the medical profession has underestimated the danger of infection from the use of public toilets. Not only typhoid bacilli, but also gonococci were found capable of growth two hours after drying, and the spread of an infection in this way would thus seem possible. The author tested an apparatus for the disinfection of the seating board, called the "clofector," which contains a formalin generating contrivance and kills the bacteria in from ten to thirty minutes, thus markedly reducing the danger of infection.

March 11, 1913.

A New Codeine Preparation.—A. Fraenkel says that codeine is the cough remedy *par excellence,* because in contradistinction to morphine and pantopon it has no narcotic action on the higher cerebral centres, but a reflex sedative action on the respiratory centre, and does not lead to habit formation. A satisfactory substitute is a paracodeine, made of hydrated codeine. This is twice as powerful as codeine and is capable of checking cough more rapidly and for a longer period with half the dose. The average dose is from 0.02 to 0.04 gramme.

Colloidal Palladiumhydroxydul "Leptynol."—M. Kauffmann, proceeding from the standpoint that the metals of the platinum group, especially palladium, are preeminently catalysts and oxygen carriers, concluded that colloidal palladium would be an excellent remedy for reducing obesity. He convinced himself of the nontoxicity of the preparation by experiments on animals. The best colloidal solution is one of wool fat palladiumhydroxydul in liquid paraffin, which contains 2.5 per cent. palladium in each c. c. Two c. c. are injected each time into the abdominal wall. After two and a half years of use it may be said that the preparation exerts a good therapeutic effect on the severe forms of obesity.

Chloroform Narcosis and Diseases of the Liver.—W. Hildebrandt is convinced from animal experimentation and clinical observation that chloroform, alone, is capable of bringing about the severest degeneration in a normal liver, and that deaths following a few days after chloroform narcosis, with the picture of a typical acute yellow atrophy and showing corresponding pathologicoanatomical changes, are positively traceable to chloroform poisoning. A second factor, a lessened resistance, i. e., pathological changes of the liver, must be made responsible for fatal complications. Therefore, before every narcosis the determination of the urobilin should receive special attention.

Extirpation of Brain Tumor under Local Anesthesia.—H. Andree reports the removal without pain to the patient of a tumor, a psammoma of the dura, the size of a small fist, under local anesthesia. A circular subcutaneous injection of the line of incision was made with one per cent. suprarenin novocaine solution. The patient experienced no pain, even while the dura was being split.

Therapeutic Application of Autogenous Serum.—B. Spiethoff has observed good results in various inflammatory affections of the skin (prurigo herpetiformis, chronic urticaria, pruritus, etc.) by the repeated injection of the patient's own blood serum. A difference in the results with activated and nonactivated serum has thus far not been observed.

Salvarsan and Cerebrospinal Fluid in Early Syphilis.—K. Altmann and G. Z. Dreyfus found in untreated cases of syphilis, in the early stages, that only twenty-two per cent. of the cases showed normal relations of the fluid. With the aid of salvarsan treatment it has been possible to reduce its pressure to normal in a vast majority of the cases. Large salvarsan doses are necessary for bringing about good results. The length of the intervals between the injections is very important. The best method is to give from six to eight injections of 0.5 gramme, in from four to six weeks, in combination with a mercury course.

March 18, 1913.

Abderhalden's Etiological Diagnosis of Pregnancy.—E. Engelhorn reports that Abderhalden's dialysis procedure does not give a specific reaction, as carcinomatous tissue was frequently dissolved by the serum of pregnant persons. The serum of nonpregnant individuals often gave a positive reaction. Therefore we are not justified in making a diagnosis on this basis alone.

Benign Polyps of the Rectum and Sigmoid Flexure.—Decker is of the opinion that for the removal of deep seated rectal polyps only endorectal surgery should be considered. For pedunculated polyps the cold snare should be employed, and for high seated tumors with broad bases the Pacquelin cautery. In all the author's rectal cases there was no hemorrhage; therefore he considers this method without danger.

Presence of Specific Protective Ferments in the Serum of the Mentally Diseased.—A. Fauser has examined serologically 100 patients with psychoses in accordance with the specific requirements of Abderhalden's method. In the great majority of the cases of the dementia præcox group a protective ferment was found against the action of the reproductive glands and brain cortex, and at times against that of the thyroid. In syphilitic and metasyphilitic diseases there were found regularly only cortex protecting ferments, in manic depressive insanity, and in all so called functional psychoses no protective ferments up to the present time have been found against any organs whatsoever.

March 25, 1913.

Heredity of the Inclination for Development of Tumors.—B. Morpurgo and A. Donati de-

scribe animal experiments from which it could be seen that artificially produced rat sarcomas of the immediate descendants of tumor animals were not greater than in the immediate descendants of non-tumorous animals of the same species, and that the propensity to retrogression of the tumors was more in evidence in the former than in the latter. Therefore it was not shown by these experiments that the inheritance of an individual disposition to the development of the tumors is present.

Neosalvarsan.—G. L. Dreyfus finds that neosalvarsan seems to have a milder and less intensive action than salvarsan. Therefore in inveterate syphilitic diseases of the central nervous system salvarsan is to be preferred. In most cases the combination of salvarsan and neosalvarsan has special advantages. Unpleasant side effects have been noticed after the use of neosalvarsan, notwithstanding its greater solubility, but by the use of unobjectionable technic and careful dosage even these may be avoided. He recommends the use of doubly distilled water prepared in a Jaener glass apparatus for injections of neosalvarsan and salvarsan.

Salvarsan and Neosalvarsan Treatment of Local Spirochetosis.—Gerber advises the local application of from five to ten per cent. watery or glycerin solution of salvarsan and neosalvarsan in powder form in the local spirochetoses (such as the Plaut-Vincent angina, ulitis simplex, stomatitis, noma, and alveolar pyorrhea). In these cases it is ordinarily a specific. The intravenous injection should be reserved for the severe cases accompanied by general symptoms.

First Aid in Asphyxia by Direct Insuflation of Air.—Kuhn says that it is very difficult to establish the actual commencement of death. The cessation of respiration signifies nothing; the inaudibility of the heart sounds, very little. There are many authentic cases on record where life returned many hours, and even days, after the patient had been declared dead. The necessity of resuscitating procedures is therefore very essential, particularly in cases of electric shock, lightning strokes, asphyxias, and gas poisoning. Beside mechanical respiration it is necessary to force air or oxygen directly into the lungs by the catheter, or other contrivance. The manipulations about the mouth are easy, for we are dealing with an unconscious person and the apparatus need be only very simple.

ZENTRALBLATT FÜR CHIRURGIE.

March 22, 1913.

Absorption by the Pleura.—Boit injected a saline solution, with and without the addition of a one per cent. solution of India ink, carmin, or other stain, or of olive oil, into the pleural cavity of dogs for the purpose of studying the nature of its absorption. He found that after he had made such an injection on one side, the fluid appeared almost immediately on the other, and that it proceeded to accumulate slowly in its lower portion. A few minutes after fifty c. c. of the staining solution had been injected into the right pleura the entire left pleura was deeply stained. The same result was obtained when the thoracic duct and the right lymphatic trunk had been ligated beforehand. These experiments show that absorption takes place from the pleural cavity through the activity of the endothelium, which guides the fluid, oily, and corpuscular components into the subendothelial lymph spaces and tracts.

How Should the Wound be Treated in Pyelotomy?—Raffaele Bastianelli says that an incision in the pelvis of the kidney will heal without suturing unless there is some obstruction in the ureter, a serious infection, too large a wound, or a wound with ragged edges. When he finds it difficult to draw up the kidneys he does not try to loosen the adipose tissue, but cuts directly down upon the stone; the fat then closes the wound and renders a suture unnecessary. When the wound in the pelvis of the kidney is long or lacerated it may be covered with a flap of fat. He does not recommend this method in all cases, but for those in which it is indicated.

Separation of the Appendix.—F. Steinmann reports a case in which the appendix was left *in situ* after it had been severed from the cecum, as it was involved in an inflammatory mass which glued together the ileum, omentum, and median wall of the cecum. The appendix seemed to be normal at the place where it was divided, and the stumps were sutured separately. The case seemed to be one that was especially well suited for such a procedure, but the result was not good. An acute inflammation flared up, the appendix became perforated, a fecal concrement was extruded, and an abscess formed; which necessitated the reopening of the abdomen two days after the primary operation. The appendix was then removed with considerable trouble and the abscess drained and tamponed, and the patient finally recovered.

LYON MÉDICAL

March 30, 1913.

Epilepsy during Typhoid Fever.—F. Mouisset and L. Folliet state that while it is well known that epilepsy may follow typhoid fever, the disorder may also occur in the course of the disease. In the latter case it may appear either where there had not previously been any nervous disturbance—usually in severe and prolonged cases—or where epilepsy had developed before, but became latent. The authors report the case of a man, alcoholic and previously subject to convulsions, in whom, during convalescence from a severe typhoid attack, with numerous complications, two epileptic seizures occurred. Uremia could be definitely excluded, but it was noted that whereas the liver had been enlarged and the urine brown and scanty, diminution in the size of the liver, polyuria, and a return of the urine to its normal color coincided with the seizures. The recurrence of the epilepsy may thus perhaps be ascribed to the fact that the blood, at the time of the onset of polyuria, was loaded with toxic material, which acted on the nerve centres.

PRESSE MÉDICALE.

March 29, 1913.

Dose and Modes of Administration of Strychnine.—P. Troisfontaines deplores the prevailing timidity with regard to the dose of this alkaloid, and states that he has not only given daily doses of 0.02, 0.03, and even 0.04 gramme without ever witnessing any serious untoward effect, but is con-

vinced that the larger the dose given the more marked the therapeutic results. While, as Kobert states, patients with cardiovascular disease may show convulsive effects more rapidly than others, no great risk is entailed in this connection, as the author has given strychnine to many heart cases without untoward phenomena. That the drug may be given in large doses for a long period without eliciting signs of intolerance is illustrated in a case of syphilitic myelitis in which 0.015 gramme was given daily for two months, then 0.024 for six weeks, and finally 0.03 for nearly a year, without any unpleasant effects. In conjunction with small doses of mercury cyanide, intravenously, the strychnine medication led to a gradual disappearance of bladder and locomotor paralysis. Troisfontaines believes 0.02 to 0.035 gramme daily to give the best results; this amount may be attained in a few days and only exceptionally gives rise to a sense of mild "intoxication," with slight headache and muscular rigidity. These effects promptly disappear if the dose is even only slightly diminished. In marked collapse and acute lung edema, 0.01 and even 0.015 may be injected at a dose, to be repeated, if required, in three, four, or five hours. In alcoholics, as much as 0.04 or 0.05 may be given in twenty-four hours. Strychnine nitrate is preferable to the sulphate in that it contains six per cent. more of the pure alkaloid and is anhydrous, and therefore invariable in strength, whereas the sulphate varies in activity according to whether it has effloresced or not and the amount of water of crystallization it has taken up in separating from its solutions. The author gives, in accustomed individuals, 0.008 to 0.012 gramme of strychnine in pill form during or after each meal. He lays stress on the utility of the drug in alcoholics and in cases of infectious disease where temporarily the heart must be sustained and general depression combated with drugs. Where caffeine, camphor, ether, and epinephrin seem the only resources left, strychnine in full doses is a valuable reserve measure, as the author's experience has shown him.

April 9, 1913.

Fracture of Ulna with Luxation of Head of Radius.—E. Kirmisson objects to the statement of Abadie, in regard to the treatment of this condition (see this JOURNAL for February 22, 1913, page 412), that failure of reduction of the ulnar fracture is less often due to nonreduction of the radial dislocation than to the jagged fragmentation of the ulna, which renders impossible sufficient extension to disengage and coaptate these fragments. Kirmisson considers that, in recent cases, the ulnar fragments overlap because of the shortening of the forearm consequent upon the luxation of the radial head, and that under these circumstances the chief aim should be to reduce the radius; after this has been accomplished reduction of the fracture will present no difficulty.

BRITISH MEDICAL JOURNAL.

April 19, 1913.

Studies on Beriberi.—Casimir Funk recalls the fact that the vitamine fraction obtained from yeast and other food stuffs is curative of the condition of beriberi in birds. This substance had been considered to be an entity, but he has been able to fractionate it into three substances. One, melting at 229° F. and appearing in needles and prisms, and being nearly insoluble in cold water; the second very soluble in cold water and yielding a difficultly soluble picrate and melting at 235° F.; and the third more soluble than the first and melting at 222° F. These substances have not as yet been tested in regard to their powers of curing beriberi; hence Funk advises that the whole purified vitamine fraction be employed for the present.

Alimentary Toxemia; Cutaneous Indications.—James Galloway groups the cutaneous phenomena of alimentary toxemia as: 1. Those resulting from vascular disturbances, which disappear and leave no permanent trace, for example, urticaria, erythema, etc. 2. Conditions in which an inflammatory lesion progresses to infiltration of the skin with cellular elements, terminating in persisting deformity, such as vascular dilatation atrophy, ulceration, and scarring. 3. Purpura, diffuse, punctate, and associated with other hemorrhagic manifestations. 4. Pigmentation. He believes that the lesions of the first group, particularly urticaria, are more frequently the result of direct absorption of noxious ingesta or a consequence of the simpler chemical changes in foods occurring in the upper portion of the alimentary tract from the action of the natural alimentary ferments. The eruptions of erythematous nature, on the other hand, arise more frequently from affections of the large intestine, in which the terminal processes of digestion take place. He also says that there are reasons for associating that type of purpura which is marked by large areas of cutaneous hemorrhage with absorption of poisons from the upper part of the alimentary tract. The petechial and punctiform types appear to occur as the result of the terminal digestive changes or of abnormal fermentative processes occurring in the lower bowel, and possibly influenced by the microorganisms present.

Chronic Intestinal Stasis.—Arthur F. Hertz remarks that even those symptoms which by common consent are regarded as characteristic of this condition, are by no means pathognomonic. The only trustworthy means of determining the presence or absence of chronic intestinal stasis is by a series of careful examinations of the motility of the gastrointestinal tract by the x rays. Hertz calls attention to the fact that bismuth tends to reduce intestinal peristalsis in those cases in which there is a considerable formation of hydrogen sulphide: hence he advises the use of barium sulphate to replace bismuth. As a result of a long series of painstaking observations he draws the following conclusions regarding the question of chronic intestinal stasis: 1. When precautions are taken to prevent errors in diagnosis, intestinal stasis is never found to lead to gastric stasis. 2. Intestinal stasis does not lead to kinking, dilatation, or ulceration of the duodenum, and duodenal ulcers are associated with an unusually rapid passage of chyme from the stomach, and through the entire small intestine. 3. Stasis in the ileum is a normal phenomenon and is due to the action of the ileocecal sphincter. Iliac kinks are relatively rare, and do not directly increase normal iliac stasis. Normal iliac stasis may be increased by spasm or by absence of relaxation

of the sphincter, due to disease in the cecal region, including perhaps kinks in the ileum. 4. Intestinal ptosis does not lead to stasis, except in rare instances at the splenic flexure. A pelvic cecum and a pelvic transverse colon are compatible with perfect health and normal intestinal action. In most cases of constipation a single portion of the bowel, such as the rectum, pelvic colon, ascending colon, or splenic flexure, is alone involved. Treatment should, therefore, be directed to the affected part only. In those cases in which the entire colon is involved medical treatment is almost invariably successful, but when it is not, ileosigmoidostomy, with or without colectomy, is indicated.

LANCET.

April 19, 1913.

Morbid Anatomy of Periodontal Disease.—J. F. Colyer concludes from an examination of specimens in man and animals that: 1. The bone lesion is a progressive rarefying osteitis which begins at the margin of the alveolar process. 2. The disease is purely local in origin and has its immediate cause in the formation of stagnation areas around the teeth. 3. The rate of destruction in different regions varies with the varying density of the bone.

Abdominal Pain in Infants.—Eric Pritchard gives the causes of abdominal pain in infants in their approximate order of frequency as follows: 1. Dysperistalsis of the intestines, including enterospasm caused by irritation, obstruction, or nervous incoordination. 2. Disturbances of the motor functions of the stomach, including pylorospasm, hour glass contraction, spasm of the cardiac sphincter from wind, food, or other cause. 3. Incoordination of the motor functions of the bladder, spasm of the sphincter, etc. 4. Referred pain from disease in the thoracic cavity, as pneumonia, pleurisy, empyema, etc. 5. Renal colic. 6. Spinal caries and osteomyelitis. 7. Peritonitis, appendicitis, etc. In infants under six months of age the first is the most common cause of abdominal pain; in fact it is a more frequent cause than all of the other causes taken together.

BOSTON MEDICAL AND SURGICAL JOURNAL.

April 24, 1913.

Trichiniasis.—Thomas F. Leen describes trichiniasis as an acute, febrile illness with more or less marked gastroenteric symptoms, edematous swelling of the face, mainly of the eyelids, redness and eventually ecchymoses of the conjunctiva, sleeplessness, profuse sweats, pains in the muscles with stiffness and hardness, absence of patellar and tendo Achillis reflexes, Kernig phenomenon, absence of enlargement of the spleen, strong diazo reaction, leucocytosis, eosinophile embryos circulating in the blood, and trichinæ located in the striated muscles. To differentiate it from typhoid is confusing because of the slow onset, gastroenteric disturbances, continued ascending temperature, apathy, and the positive diazo test, especially when there is no enlargement of the spleen and no Widal reaction. Against typhoid are the edema of the face and lids, the marked muscle symptoms, the absence of splenic enlargement and rose spots, and the presence of the leucocytosis and eosinophilia. The heart and kidneys and inflammation of the face and scalp are readily excluded as causes of the edema. Trichiniasis is not as sudden and violent as meat and sausage poisoning, in which the blood picture is different and there is no edema of the lids or muscle lameness. Rheumatic troubles may be ruled out by the edema of the face, the eosinophilia, and the cause of the disease. Acute primary polymyocitis is difficult to differentiate, as the eosinphilia does not aid, but examination of muscle from the deltoid or biceps will show trichinellæ, and perhaps the embryos in the blood. Multiple neuritis is easily differentiated.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

April 26, 1913.

The Danger and Prevention of Severe Cardiac Strain during Anesthesia.—W. D. Gatch, Dewell Gann, and F. C. Mann observe that there are three classes of patients who are peculiarly liable to be injured in the course of anesthesia by overdistention of the heart; those with a well developed muscular system, those who are alcoholic, and those who have disease of the circulatory apparatus (in which class are included patients with cardiac and vascular disease, exophthalmic goitre, pneumonia, or empyema). The writers conclude that the Trendelenburg position is harmless for patients with normal hearts, provided respiration is free and unobstructed. In case of partial or complete failure or obstruction of the respiration, the patient should at once be restored to the horizontal or semirecumbent position. In cases of cardiac disease the Trendelenburg position should be used only with the most extreme caution. To prevent a too sudden influx of blood to the heart the patient should be gradually placed in the Trendelenburg position, and to prevent a sudden failure of the circulation the patient should be gradually lowered. Strain on the heart is greatly increased by the effect of struggling and of pressure on the abdominal viscera. These agencies are harmless to patients with normal hearts and arteries, if the breathing is adequate to prevent cyanosis. During asphyxia all of the three agencies considered tend to produce a rapid dilatation of the right side of the heart; a heart once over distended while in a state of asphyxia is temporarily, and possibly permanently, injured, and this may explain certain cases of postoperative death. Robust patients should be given morphine, and alcoholic patients morphine and alcohol, before anesthesia, and should not be permitted to become cyanotic. Patients with cardiac disease, pneumonia, or empyema should receive morphine before the anesthetic and should be anesthetized cautiously and slowly in the sitting or semirecumbent posture. The production of a hypercapnia fends against respiratory failure during anesthesia, and hence the harmful effects of any agent which promotes a free supply of blood to the heart. Under ether certainly, and probably under nitrous oxide, cardiac failure is always secondary to asphyxia. Morphine and moderate ether narcosis does not impair vasomotor tone in man. Hence in the absence of hemorrhage the semiupright posture is not harmful to man under this form of anesthesia.

Prophylactic Vaccination against Epidemic Meningitis.—J. H. Black concludes that prophylactic vaccination produces a high degree of immunity in most cases, this immunity being demonstrable at the end of one year. At the end of a year some individuals may show an actual increase in immune bodies over those demonstrable soon after vaccination. Fixation occurred with the serum of the positive control who had recovered from meningitis, but this fixation did not reach as high dilutions as did that of some of those vaccinated, as has been previously found by other observers. Experimental evidence warrants the conclusion that prophylactic vaccination is a measure of the highest value in the control of epidemic meningitis.

Causes of the Migration of the Omentum.—Arthur E. Hertzler states that surgeons have long known the fact that the great omentum is commonly found attached to areas of inflammation in the abdomen, but the compelling forces that attract it are yet undiscovered. Peristalisis is supposed to account for its actual movements, but this is not proved. The writer concludes that the migrations of the omentum are not due to any particular inherent properties. Corn pith migrates in the same way under similar conditions. Fibrin formation, however, is the preliminary requisite for migration, no fibrin, no migration. The movements of the omentum are produced by the same forces that attract cells to any inflammatory field, and the carrying with them of the omental network is a purely accidental occurrence.

Surgical Method of Clearing up Chronic Typhoid Carriers; Report of Two Cases of Removal of the Gallbladder and the Entire Cystic Duct.—Thomas J. Leary concludes that the operation of removal of the gallbladder and cystic duct is a very valuable means of clearing up chronic typhoid carriers. He advises that the treatment of all typhoid carriers should be carried out only in conjunction with the laboratory men, and that the different medicinal treatments, but more especially the continued typhoid vaccine treatment, should be carried out thoroughly from the start. These methods failing, the typhoid carrier should either be quarantined or be operated upon, the gallbladder and the entire cystic duct being removed. The two cases operated in by the writer cleared up within nine days. No aftereffects followed the removal of the organs in either case.

Fatal Peritonitis Due to Infection with Bacillus Coli.—Arthur L. Grover, in reporting a case of septic peritonitis resulting from infection with *Bacillus coli* remarks that cases of peritonitis caused by the colon bacillus are common, and cases of uterine infection with the same bacillus are common, but colon bacillus peritonitis occurring through perforation of the uterus, as in the case reported by the writer, is not common. The patient would acknowledge nothing, and no light could be thrown on the instrument used or on how such a large perforation could have been made without more shock. It is not known that the perforation was made artificially, but no other explanation seems possible, as the attending surgeon did nothing more than tampon the cervix to increase dilatation.

MEDICAL RECORD.

April 26, 1913.

What is Psychanalysis?—E. W. Scripture defines psychanalysis as a group of methods used for analyzing the human mind, particularly those portions of it that are not directly conscious, being analogous to the dissection of the body and the microscopical study of the tissues. Combining the qualities of care, caution, and exactness, it is complemental to the scientifically accurate anatomical and physiological neurology of to-day.

The Albumin Analysis of the Sputum; Its Great Value as a Reliable and Positive Diagnostic Laboratory Method for Differentiating Pulmonary Tuberculosis from Other Pulmonary Diseases.—John Ritter emphasizes the importance of properly collecting the sputa, and describes the proper technic not only for this but also for making the sputum test, adding that the technic for the test is so very simple, the results so very satisfactory, and the necessary appliances so few in number, that this examination of the sputum should become a routine method in every case of suspected or positive tuberculosis. He concludes that if the chemical examination of the sputum is albumin positive, but tubercle bacilli negative. With physical findings obscure and indistinct, the intradermal injection of tuberculin will often change both to positive. When the albumin reaction and tuberculin test are both positive they will outweigh a negative clinical examination; likewise a negative albumin reaction and tuberculin test are of far greater and more positive value than the negative clinical examination, since a negative clinical examination may be doubtful and may not be positively negative. A single positive sputum finding is not definitely diagnostic of tuberculosis, but a single negative albumin reaction will certainly preclude tuberculosis. A sputum negative for albumin is also microscopically negative for the tubercle bacilli; in the open or infectious cases both albumin and bacilli will be found in the sputum, while in the closed or noninfectious cases albumin will be present without the bacilli. The positive albumin reaction indicates with certainty an inflammatory invasion of the pulmonary parenchyma, which may be tuberculous, pneumonic, or congestive, and the reaction is always negative when the lung tissue has not been affected, as in acute and chronic bronchitis and asthma; therefore, the reaction has most value in those cases in which the pulmonary infection is not yet manifest, and the differential diagnosis lies between tuberculosis and simple bronchial catarrh. Albumin in the sputum is often the forerunner of the tubercle bacillus, and albumin may be found in the sputum many months before the bacilli; hence a positive sputum reaction with but few or very slight physical findings and negative bacilli would seem to indicate a possible incipient or preincipient tuberculosis. Like all clinical signs, however, it must be considered with all other signs, subjective and objective, in order that positive conclusions may be reached.

Epilepsy.—C. R. McKinniss notes, as the common symptoms observed when interviewing an epileptic, some impairment of memory and abundant

conceit and self assurance. The religious fervor of epileptics is often strongly contrasted by their conduct. During the paroxysmal state an epileptic may exhibit mild excitement or mania, or, on the other hand, melancholia with rare suicidal attempts; a feeling of impending personal harm is present in some, or impulses to do strange things, though frequently the mental atmosphere is cleared after the convulsion. The writer reports the history of three cases demonstrating these several phases, and in summing up admits that while the cause of epilepsy is as yet unknown, heredity and excesses must be recognized as contributory etiological factors. The mental states vary within wide limits. As mentioned, they may be melancholic or maniacal, at times suicidal, and they are also frequently homicidal. The patients are usually irritable, and almost always hopeful of recovery.

The Management of the Puerperium and Its Minor Abnormalities.—In this connection B. A. Fedde emphasizes two points: The Fowler position in every case from the beginning, and early consultation when complications, all but the very simplest, occur. In Fowler's position the patient is raised up on pillows beneath the shoulders, or on a washboard inserted between the springs and mattress, and blocked up.

Early Diagnosis of Tuberculosis, with Notes on Internal Antisepsis.—C. Am Ende, believing that recognition of the presence of tuberculosis in the earlier part of the prodromal period, when the sputum is bacilla free, may be the means of saving life, has experimented with the Moro salve, in preference to tuberculin injections, in twelve reported cases. Moro salve contains equal parts of lanolin and tuberculin, and when rubbed in at the pit of the stomach produces within two days a characteristic efflorescence. In this series of cases the writer was enabled by the Moro reaction to detect the presence of tuberculosis in its earliest incipient stages, as well as in its obscure and latest stages; it demonstrated the absence of the disease, as well, and to a degree the intensity of the reaction was apparently proportionate to the intensity of the disease. No resistance was met with in children. Except in a case of early developing hip disease, the reaction revealed the disease at a time when its cure was not so very difficult. The principal, though rather obscure, symptoms suggesting the use of this salve were an arrested normal development, emaciation, a general laxity, and a short dry hacking cough. The active agent in the production of the Moro reaction is tuberculin. The writer believes that internal antisepsis is capable of utilization in proper cases and remarks that its condemnation has probably resulted from its use in insufficient dosage.

AMERICAN JOURNAL OF OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN.

April, 1913.

The Influence of the Ovary as an Organ of Internal Secretion.—Graves gives a brief review of the present status of our knowledge concerning the physiology of the ovary. He first discusses the question as to whether there exists any definite anatomical evidence that the ovary is actually an organ of internal secretion. From the evidence it is seen that the corpus luteum has the greatest claim from a histological standpoint of being the chief centre in the ovary for the manufacture of an internal secretion. The author concludes that the ovary is probably, but not certainly, an organ of internal secretion; also that infantilism is not a result of ovarian deficiency. He holds that there is evidence to show that the ovaries preside over menstruation by an internal secretion which has a selective action on the endometrium; and that abnormal uterine bleeding may be due to increased secretion of the ovaries. Graves believes that, inasmuch as castration of sexually mature women directly causes vasomotor symptoms, ovarian extract is invaluable in the treatment of the vasomotor disturbances following castration. Its value in the treatment of other gynecological conditions is problematic.

Tuberculosis in Its Relation to Pregnancy, Labor, and the Puerperium.—Lobenstine calls attention to the fact that the strain of child bearing exhausts the vitality of the tuberculous subject and in a high percentage of cases brings about an untimely end. He shows that pregnancy, in many cases, may be directly responsible for the development of tuberculosis in susceptible individuals and may stir up a dormant infection. It is also shown that an existing tuberculosis may be seriously aggravated by pregnancies. Consequently, Lobenstine advises that tuberculous women should not marry until the process is fully arrested. This is important, because with one of the couple tuberculous, the other may readily become so, and then there are the above mentioned dangers of pregnancy. Incidentally he expresses the opinion that the time will come when no marriage license will be granted unless both of the contracting parties are in sound physical, as well as mental, condition.

The Function of the Thymus Gland.—Doctor Lampé of Halle, Germany, gives a very interesting presentation of this matter, both from the anatomical and physiological viewpoint. The experiments of various men are reported and the results summarized as follows: The thymus gland is an organ of vital importance, as extirpation at the height of its development results finally in death. Probably its most important function consists in inhibiting acids, thus removing injurious substances from the blood. This supposed function gives an explanation of the disturbances occurring in the calcium metabolism after extirpation of the organ, for the changes in bone and in the central nervous system. The thymus gland occupies a dominating position over the lymphatic apparatus. Between the thymus, on the one hand, and the various organs of internal secretion on the other, complex relations exist. This is especially true of the spleen. This organ is, so to speak, "prepared" by the thymus to take up some of the latter organ's still unexplained functions after its involution.

ANNALS OF SURGERY

March, 1913.

Myositis Ossificans Traumatica.—William B. Coley reports three cases illustrating the difficulties of diagnosis from sarcoma. The first developed in the quadriceps of a young man, aged nineteen, following a football injury; the second in the muscles

and ligaments of the lower femur of a young woman, aged twenty-six, following a runaway accident; and the third in a boy, aged sixteen, where the quadriceps became involved after a football injury. As to the etiology, one of the theories supposes that at the time of the injury a portion of periosteum becomes detached and that from these fragments of periosteum result the bone formations in the muscles and fascia. In other words, that they are in the nature of bone grafts. The chief condition to be differentiated from is sarcoma. The writer says that in the radiograph myositis ossificans the sharp line corresponding to the junction of the tumor to the bone is always present, while in sarcoma it is less distinct except in the very early stages of the disease. On palpation in myositis ossificans the consistence is much harder than in sarcoma; furthermore, it is almost always uniform in character, whereas in sarcoma it is very apt to be soft in some places and harder in others, though there is never the bony hardness typical of myositis ossificans. Early disability of the neighboring joint and pain are much more apt to accompany myositis ossificans than sarcoma. Lastly, a portion should be removed for microscopical examination, or, this being refused, the tumor, under observation, will rapidly increase if sarcomatous, and slowly, if at all, if it is myositis ossificans. The writer believes that no single method of treatment is applicable to all cases.

The Thyrogenic Origin of Basedow's Disease.—J. H. Jacobson reviews the experimental and clinical evidences relating to the thyroid origin of Basedow's disease and draws the following conclusions: 1. Basedow's disease can and has been produced experimentally in lower animals by the injection of thyroid pressure fluid (Klose), by implantation of the thymus gland (Bircher), and by the injection of the macerated thyroid gland (Baruch). Symptoms closely resembling Basedow's disease can be produced in animals by thyroid feeding. 2. The evidence at hand indicates a close relationship between the thymus and thyroid glands. 3. That the symptoms of Basedow's disease are due to either an excess or perverted secretion of the thyroid. 4. Basedow's disease has been produced in man by the excessive administration of thyroid extracts and the preparations of iodine. 5. There is a characteristic blood picture in Basedow's disease, which disappears after the surgical removal of a sufficient amount of the diseased thyroid tissue. 6. The successful treatment of Basedow's disease by measures directed toward the thyroid gland itself, as well as by serum therapy, proves the thyroid origin of the disease. 7. Basedow's disease can be cured by the surgical removal of portions of the gland in approximately seventy per cent. of all cases.

Membranous Pericolitis and Allied Conditions of the Ileocecal Region.—J. N. Jackson believes that no one theory will explain all cases of pericolonic membrane. Mayo is inclined to view this membrane as true peritoneum, which, as the cecum descended, failed to settle itself closely in the normal way to the gut wall, but, remaining loose, acquired the peculiarly excessive vascularization noted. Lane believes that within the ligaments formed to antagonize the downward strain, segments of the intestinal tube have prolapsed. Pilcher and others consider the membrane to be the result of long continued or often repeated infections of the peritoneal covering of the cecum and appendix transmitted through the intestinal wall. The following symptoms combined are usually sufficient to establish a definite clinical syndrome: 1. Intermittent attacks of pain on the right side without rise of temperature or pulse disturbance. 2. Diffuse tenderness or hyperesthesia, but without any attendant rectus rigidity. Distinctly localized symptoms are lacking. 3. Constipation. 4. Distention by gas. 5. Attacks of mucous diarrhea following constipation. 6. Gastric disturbance. 7. Loss of weight and tone. 8. Neurasthenia. This condition must be differentiated from chronic appendicitis, gastric ulcer, gallbladder disease, ovarian disease, chronic colitis, Lane's kink, and, at times, nephrolithiasis. Nonsurgical treatment should be tried first, viz., proper drainage of the large intestine, diet, massage, exercise, colonic lavage, and external supports. About seventy-five per cent. of the cases are cured surgically by the removal of the obstruction of the pericolonic membrane, supplemented by a cecal plication.

Carcinoma of the Papilla of Water.—G. W. Outerbridge reports that in a series of 5,865 autopsies there were twenty-three cases (0.4 per cent.) of cancer of the duodenum, and that it has elsewhere been reported that seventy per cent. of duodenal cancers are situated at the papilla of Vater. In a review of the literature he finds 112 cases of cancer at the papilla of Vater and that twenty-two were submitted to the radical operation. He finds that no single symptom is common to all, not even jaundice, which, however, was naturally by far the most frequent. The jaundice is gradual in onset and progressive, pain is variable, and vomiting, fever, and intestinal hemorrhage may also be present. The duration of the disease is comparatively short, the average time elapsing between the onset of symptoms and death being about seven months, and in many cases less than three months. In most cases death results from cholemia before metastasis or invasion of the surrounding organs by the tumor has occurred. In sixteen of the reported twenty-two radical operations, the duodenum was opened by a longitudinal or transverse incision, and the growth, with a small amount of surrounding healthy tissue, excised; the bile and pancreatic ducts having been cut through and then reimplanted in the duodenal wall. Several authors advocate a two stage operation, believing that the obstructive symptoms (cholemia, etc.) should be relieved by a less serious procedure than radical extirpation of the tumor, which the patients are rarely in condition to stand satisfactorily; this to be followed subsequently by the radical operation.

The Arrest of Hemorrhage from Bone by Plugging with Soft Tissues.—G. T. Vaughan satisfactorily checks troublesome hemorrhage from bone, as in fractures of the skull, amputations, resections, bone transplantations, etc., in the following manner: Cut a fragment of soft tissue, preferably muscle, from any convenient place in the field of operation and apply the fragment to the

bleeding surface or edge of the exposed, broken, or cut bone, by means of the fingers. If the tissue does not adhere at once it should be rubbed into the bleeding area by some suitable instrument, as a knife handle, dissector, or chisel, so that the vascular openings in the bone become plugged with small fragments of soft tissue.

Proceedings of Societies.

REPORT OF THE NEW YORK MEDICAL JOURNAL COMMISSION OF THE CHAUTAUQUA SCHOOL OF NURSING.

The NEW YORK MEDICAL JOURNAL of January 4, 1913, having commented editorially upon the recommendation of the New York State Nurses' Association to have the Nurses' Practice Act so amended by legislature as ultimately to debar from practice all nurses who had not had hospital training, Dr. J. M. Brooks, principal of the Chautauqua School of Nursing, in a letter published in our issue of January 11th, urged the following reasons against the adoption of the said amendment: 1. There are not enough hospital trained nurses to supply the demand (but one tenth of those in practice, according to statistics). 2. The charges of hospital nurses being prohibitive for families of limited means, eighty-five per cent. of sufferers, who are now provided with competent, though nonhospital, nurses, would be deprived of nursing. 3. A large number of earnest, capable women would be deprived of a livelihood. 4. The demand for the "closed shop" amendment is not made by the medical profession or the public. 5. The correspondence trained nurse, when she has gone through an exhaustive course, is immeasurably superior to the untaught nurse and, at least, a competent substitute for hospital nurses, for people who cannot afford to employ the latter.

Believing that the graduates of the Chautauqua School of Nursing fulfilled these requirements and, in justice to the physicians and patients who have employed them, Doctor Brooks requested that a group of three physicians appointed by this JOURNAL, make a thorough investigation of the status of these graduates and determine: 1. Whether the Chautauqua School carried on a work beneficial to public welfare; 2, whether its work was such as to provide "competent nurses for those patients who cannot meet the wage demands of the organized hospital graduate." Full access to all records, study material, correspondence, management, etc., being tendered without reserve or conditions, the undersigned members of the editorial staff, all connected with hospital nurse training schools and practitioners, were appointed as a commission to conduct the desired investigation and report thereon.

A visit of the commission to the school in Jamestown, N. Y., to conduct a careful analysis of its system of instruction and examination, its financial management and purpose as an enterprise, and of the efficiency of the graduates as judged through the opinions of physicians under whom they had nursed, brought out the facts described under the following headings:

Character and Object.—The Chautauqua School of Nursing was founded in 1902 as a philanthropic and self supporting enterprise by men of means, to encourage the study of high grade nursing, among families, missionaries, sisters of charity, matrons of educational institutions, teachers, or individuals of both sexes who, through age limit or inability to leave their homes for two or three years, were unable to obtain hospital training. Prominent among these were the female "practical nurses" whose efficiency could, by means of a thorough theoretical course, be enhanced, and persons who, though occupied, wished to devote their labor to an occupation more in keeping with their inclinations.

The commission found, by means of an examination of the correspondence of the institution with its pupils, that this plan had been strictly adhered to, the purpose vouchsafed by student nurses admitted during a year having been as follows:

To enhance efficiency as practical nurse, though unable to drop practice	47 per cent.
For home use only	27 per cent.
To increase earning power and satisfy aspiration to become nurses	26 per cent.
Total	100 per cent.

Of the students enrolled for the courses thirty-two per cent. were unable to attend hospital training school because over thirty-five years of age while fifteen per cent. were unable to attend hospital training school because unable to leave home.

Conditions of Admission.—The rules of the school require that the applicant be over nineteen years of age and of good moral character, while her letters of recommendation must include one from a physician; she must show evidence of having received at least a good common school education. Moreover, the school reserves the right to discontinue teaching the student nurse if her studies prove unsatisfactory. In that case, however, all fees received from the student are to be returned.

The commission found that these conditions were complied with, and that *over fifty per cent.* of the applicants were rejected, the main reasons being inadequate age, lack of education, ill health, ability questioned by a physician, and objection of the parents.

A perusal of the correspondence with the students dropped for incompetence and those who could not terminate the course through lack of funds or other causes, indicated marked and generous consideration of the management for them, and a total absence of cupidity or business harshness. Inquiry disclosed that no magazine in which the school's announcement had appeared during the past ten years had ever received a complaint from its subscribers regarding their relations with the school. This fact is mentioned to indicate the character of the school's business administration.

Of all applicants enrolled, sixty-five per cent. were found to complete the course.

Instruction.—The Chautauqua School asserts to instruct its pupils by a system of correspondence calculated to supply the advantages, 1, of a carefully regulated course of lectures, supplemented by illustrations, diagrams, charts, etc; and, 2, of individual instruction by letters; all to impress upon their minds facts which a fully competent nurse should know. The pupil nurse must memorize the essentials of the course to pass the weekly written examinations and these must reach a certain degree of excellence to unable her to retain, as stated under the preceding heading, a connection with the school.

The scope of the subjects taught, and the completeness of the course, exceeded the expectations of the commission, the purpose of the instruction being eminently calculated to enable the nurse to carry out efficiently the instructions of the attending physicians. In logical sequence, the subjects taught (greatly abbreviated from the original report, owing to lack of space) proved to be as follows:

The duties of the nurse in what should be under her care an ideal sick room; attentions to the patient's person and handling of the helpless; observation and registration of symptoms, pulse, temperature, expression, excretions, etc.; the preparation of reports, charts, tracings, etc.; a knowledge of drugs and therapeutic agents of all kinds that the physician may order, including baths, massage, etc., or methods of relief such as catherism, enemas, rectal feeding, etc.; besides a careful course in elementary anatomy and physiology.

The elements of bacteriology considered sufficiently to give the nurse a clear understanding of the meaning of infectious diseases and of the commanding importance of asepsis, disinfection, the use of physical and chemical disinfectants, etc., not only in the course of infectious diseases, but also in obstetrics and surgery.

The detailed nursing of febrile diseases and constitutional diseases; diseases of special organs, including the peritoneum, liver, kidneys, bladder, etc.; the main test for albumin, sugar, etc.; cardiovascular disease, the Nauheim baths, emergency measures; diseases of the nervous system and the mind; diseases peculiar to childhood; obstetrical nursing, opening with a careful study of the anatomy and physiology of the pelvic organs and mammary glands, and of the fetal development. The care of the expectant

mother, her dietetics, dress, exercise, care of the breasts, watchfulness through the urine, the disorders of pregnancy, etc., insofar as the nurse can aid the physician by prophylaxis, and watchfulness for danger signals are concerned, are all carefully considered, many excellent illustrations serving to elucidate the text. The process of birth and all the many features which a nurse must know in this connection—including that of acting as obstetrician should the physician's arrival be inevitably delayed. Obstetrical convalescence and care of the mother and infant during the puerperium and all its dangerous phases.

Surgical nursing was found quite as completely taught. The influence of bacteria, wound infection, sterilization of wounds and utensils, etc., the preparation of dressings, gauze, sponges, packing, etc.; preparation of the operating room, sterilizing solutions, care and handling of instruments; preparation of the patient for operation, etc. Review of the principal operations, each organ or set of organs being considered in turn. Anesthesia and its danger signals, with the remedies available. Postoperative nursing, including the various ways of using saline solution, hypodermoclysis, Murphy's proctolysis, etc.; septic wounds, general infection, pyemia, gangrene, emergencies, first aid to the injured, bandaging, etc.; the course ending with a study of hospital nursing.

All this instruction was found to be carefully revised periodically by physicians under the supervision of the principal.

Collateral Information.—Besides the direct instruction contained in the lectures, considerable information is furnished the student through direct correspondence with the principal, Dr. John M. Brooks. If the student meets with any difficulty or desires more detailed information, she is urged to consult the principal without reserve. Examination of the correspondence with a considerable number of student nurses enabled the commission to ascertain that this feature was freely taken advantage of by them to increase their knowledge. In every instance the information furnished was found to be most satisfactory and calculated to afford serious help to the student. The school maintains this association with its students after their completion of the course. Many take advantage of this opportunity, often for many years, to gain further information on nursing subjects and to keep conversant with advanced nursing methods and treatment.

Each lecture, moreover, is accompanied by an explanatory letter entitled "From the Physician's Viewpoint," in which the principal emphasizes the importance of the particular subjects in its bearing upon practice, i. e., in the sick room, and adds thereto many invaluable details. By means of printed study questions, which the student answers in writing with the lectures before her, she is caused also to impress the essential features upon her mind, and to discern, in each lecture, what points she fails to understand, and which she can elucidate by further study or by corresponding with the principal.

Examination.—The student nurse must practically memorize each lecture and week after week, as she proceeds with them, mail to the school a written examination. This consists in writing answers to printed questions formulated by the faculty. The student nurse must attain a general average of sixty-five per cent. throughout the course to obtain her certificate.

While the passing average was found by the commission to be greatly exceeded in almost every instance, this form of examination did not seem to eliminate the possibility of the student nurse's facilitating her examination by consulting her lectures when answering questions. The authorities of the school, in answer to this criticism, stated that this was a limitation which should be considered inherent in the administration of all home study work. The fact was emphasized that the school's association was with pupils of mature age who had undertaken the course with a serious and definite purpose, and therefore that this criticism could not be urged in such a degree as would obtain were its students young or immature. The honor system adopted by them had given excellent results, not a single complaint having ever been received from a physician or patient against a Chautauqua graduate. The commission ventures to suggest, moreover, that inasmuch as efficiency is the only source of success in nursing, since the work is done under the supervision of physicians, student nurses would only defeat their purpose by failing to take full advantage of the course. The testimony of physicians submitted below as to the actual ability of Chautauqua nurses in the practical field demonstrates that the school has no cause to regret its reliance upon the honor system.

Practical Experience.—The commission deemed the lack of practical experience during the period of tuition a serious defect; but a closer study of the question showed that although hospital training was an efficient way of acquiring this experience, other means of obtaining it were available. As previously stated, forty-seven per cent. of the students of the Chautauqua School are practical nurses to begin with; though untrained scientifically, they had therefore (some during many years) acquired considerable experience at the bedside before entering the school. Continuing as they do to practise while taking the Chautauqua course, they apply the knowledge thus acquired day after day, under the guidance of physicians, obstetricians, and surgeons. That a large proportion of these nurses, on receiving their certificates, are as competent as hospital nurses, owing to the large experience they had obtained before and during their course, is beyond doubt.

Of the remaining fifty-three per cent. of student nurses, twenty-seven per cent. take the course for nonprofessional nursing, home use, etc.; leaving twenty-six per cent. who either begin nursing as a vocation while taking the course, or take the latter before practising at all. All students are required by the school to conduct a system of "home practice," which means the practical application, among their surroundings, relatives, friends, etc., of the procedures described in their lectures. A survey of these and of the duties of the nurse in general clearly shows that she can acquire considerable experience by following out this plan. It is not her duty to diagnosticate a disease, but to carry out the instructions of the physician. To administer specified quantities of a medicine, at proper intervals, with graduated spoons or glasses, take the temperature, count the pulse, keep a chart, wash the patient, insure asepsis, prepare antiseptic solutions, disinfect excretions, make and change beds, ventilate the sick room, adjust supporting frames, give enemas and vaginal douches, give baths of various kinds, apply cold and hot packs, catheterize, feed rectally, use the hypodermic syringe, apply external irritants, plasters, blisters, leeches, use the inhaler, fumigate, test urine for albumin or sugar, measure the urine passed, prepare the labor bed and utensils, tend the parturient and the infant, carry on artificial feeding and pasteurization, sterilize surgical instruments, the hands, and utensils, prepare gauze, dressings, drains, sponges, cotton balls, etc., prepare an operating room, mix sterilizing and saline solutions, prepare the patient for operation, bandaging, wound dressing, etc., are all elementary measures which the student nurse, when well instructed theoretically, can practise at home, and which women in particular acquire very readily. Dietetics, an all important feature of good nursing, may also be practised at home, better in many instances than in hospitals, where the diet kitchen is often supplied with a special cook, thus giving the hospital nurse but little opportunity to practise the preparation of special foods.

As to the more scientific features of nursing, those concerned with a knowledge of disease, drugs, parturition itself and its complications, surgical procedures, etc., a thorough theoretical training is a prerequisite.

Students who only take the course for home use, or as an accomplishment only, receive theoretical knowledge, supplemented by home practice. Since, however, they do not adopt nursing as a profession, comparison with hospital trained nurses is not in order. As to those who enter the professional ranks either during or after their theoretical course, work under physicians, obstetricians, and surgeons by repeatedly bringing this knowledge into active practice, soon gives them a high degree of efficiency as aids to physicians, since (a fact which must not be overlooked) there is a great deal of repetition in her work in all cases, the finer distinctions of diagnosis, complications, and treatment all belonging to the domain of the physician himself.

That the system described has borne fruit as to practical efficiency of the graduates of the school in actual practice is shown under the next heading.

Efficiency.—Although the management of the school

placed at the disposal of the commission over 5,000 letters received from physicians under whom their graduates had nursed, it was deemed preferable to obtain up to date evidence, since an estimate of the present status of the school was desired. Of the 618 physicians practising in New York State heard from during March and April, 1913, all, excepting nine, expressed more or less briefly opposite the printed words "Statement of Efficiency" their estimate of the particular nurse named. These expressions are extremely varied, but by quoting those most commonly used and adjusting those seldom employed to the former whenever the meaning was approximately the same, it became possible to establish a standard of the actual standing of Chautauqua nurses among those who were best able to decide as to their actual value, the members of the medical profession. Their estimates of the Chautauqua nurses who had nursed under them were as follows:

Efficiency.			
Fairly efficient	2		
Efficient or competent	103		
Very efficient or competent	136		
Most efficient or competent	73	314	
Satisfactory.			
Fairly satisfactory	4		
Satisfactory	47		
Perfectly satisfactory	69		
Very satisfactory	62	182	
Good.			
Good	36		
Very good	8		
Exceptionally good	2		
One of the best nurses employed	22	68	
Comparison with Hospital Nurses.			
Not equal to the average hospital nurse	4		
Equal to hospital or registered nurses	24		
Better than hospital or registered nurses	17	45	609

The relative efficiency between Chautauqua and hospital nurses was furnished in the answers, notwithstanding the fact that no comparison had been requested. The commission approved, however, the attitude of the Chautauqua School in this respect, which is to advise its graduates to acquire hospital training if at all possible, offering to aid them in obtaining opportunities to do so if need be.

Fees Charged by Chautauqua Nurses.—We have seen that nearly one half of the graduates of the Chautauqua School had been practical nurses before taking the course, and that the latter, taken while in actual practice, endowed them with a degree of efficiency quite comparable with that of the average hospital nurse. Of the remaining half, we have also seen, but twenty-six per cent. enter the field of practice and, after two or three years' of experience under physicians, also compare favorably with the hospital nurse. Yet fifty-six per cent. of the aggregate were found on investigation to earn from $7.00 to $18.00 a week. This meets an all important feature of the question as a whole, since hospital trained nurses demand from $25.00 to $30.00 per week, a price which is prohibitive for eighty-five per cent. of our sufferers. "There is an urgent demand at all times for a moderate priced nurse who is efficient," writes one of our medical correspondents; "many patients could not have nurses were it not for them," writes another; "any legislation which would debar them from practice," writes a third, who echoes the sentiments of many others, "would work a great hardship." The Chautauqua School thus fills an imperative need in our communities by supplying nurses, a large proportion of whom content themselves with modest fees, even though, as we have seen, their efficiency is such as to give the sufferers less favored by fortune a high average of professional care, supplemented, as many of our correspondents attest, with painstaking devotion.

Conclusions.—In view of the facts recited above, the commission concludes as follows:

1. The education afforded by the Chautauqua School to its students is of a high order as to quality, completeness, and practical value.

2. The Chautauqua School carries on a work of great value to public welfare because fifty-six per cent. of its graduates in active practice accept fees which are within the reach of the eighty-five per cent. of patients who cannot afford the rates demanded by hospital trained nurses, and because hospital trained nurses are entirely too few to supply the demand.

3. As the amendment to the Nurses' Practice Act proposed by the New York State Nurses' Association would ultimately deprive the public of the aid afforded by Chautauqua nurses and all nonhospital nurses in the two directions just mentioned, and would, therefore, prove detrimental to the great majority of the sufferers of New York State, and to the medical profession, its passage would be regarded by the commission as extremely unfortunate.

4. The commission, duly recognizing, however, the superior value of the hospital trained nurse, would advocate an amendment which would cause every nurse to indicate, on her professional cards and sick room charts, the institution, hospital, asylum, school, etc., from which she had been graduated, those who had not received such a training being identified as "practical nurses." Hospital trained nurses would thus receive their due recognition, while those graduated from schools which, as in the case of the Chautauqua School, provide an excellent education, would continue their useful work. Such an amendment would, moreover, serve to rid the suffering public of New York State of poorly trained nurses, since the schools of the country which produced such graduates would soon be identified by him who alone can judge as to the actual value of a nurse, the physician.

Respectfully submitted,
GODFREY R. PISEK,
Special Editor for Pediatrics.
WILMER KRUSEN,
Special Editor for Gynecology and Obstetrics.
C. E. DE M. SAJOUS,
Editor and Chairman.

THE MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Annual Meeting, Held January 20, 1913.

The President, Dr. REYNOLD WEBB WILCOX, in the Chair.

Election of Officers.—The annual election of officers resulted as follows: Recording secretary, Dr. P. Brynberg Porter; chairman for the Borough of Brooklyn, Dr. Robert E. Coughlin; chairman for the Borough of Richmond, Dr. William Bryan; member of the council, Dr. Louis F. Bishop.

Protest against the Reporting of Venereal Diseases.—The following resolutions, presented by Dr. William S. Gottheil, were adopted:

Resolved, That the recent official request of the New York Board of Health for all physicians to report promptly to them all cases of syphilis, gonorrheal infection, and chancroid, together with the source of infection, if obtainable, is an undesirable and useless invasion of the most confidential relationship between physician and patient. The mere compilation of statistics in venereal diseases has no value, and the attempt to make it in this manner is a direct incentive to falsification and disobedience to the law. The measure is of value only as a step toward the relegation of these cases to the Board of Health, and its ultimate effect will be to promote self medication and quackery.

Resolved, That a committee be appointed to arrange suitable action in regard to this matter, and report at the next meeting of the association.

Annual Reports.—The reports of the Council, the corresponding secretary, and the treasurer were presented. The statistics given by the recording secretary showed a substantial gain in the membership of the association during the year.

High Tension Electricity as a Remedy; with Demonstration of Methods and of Cases, Including Sarcoma and Hepatic Cirrhosis.—This paper, by Dr. J. Herman Branth, appears in the present issue of the JOURNAL, on page 961.

Dr. FREDERICK DE KRAFT said that the results which Dr.

Branth had obtained by the utilization of high potential, high frequency currents in the cases presented were very remarkable. In order that it might be understood how Dr. Branth achieved his success he would briefly consider the method of producing these currents. If we attached a pair of small Leyden jars to each of the two prime conductors of a static machine and had the sliding rods slightly apart, the machine running at fair speed, we noted the rapid passage of sparks at the sliding rods. A pair of electrodes attached to the outer coatings and held the same length apart would also show a shower of sparks. Such an arrangement was shown by Dr. William J. Morton in March, 1881, under the name of static induced current. D'Arsonval interposed a stout copper spiral between the outer coatings, utilizing the same arrangement. Tesla utilized the inductive properties of a D'Arsonval spiral on a secondary spiral of greater length, interposing insulating material between the two, for obtaining currents of high potential and high frequency; the D'Arsonval current being of low potential. That these currents could be made to penetrate the tissue could be clearly shown. A pair of electrodes attached to opposite sides of a D'Arsonval spiral were placed against the opposite sides of a potato and a current of 1,500 or more millianpères was passed for two or three minutes; steam was seen to rise from the potato very quickly. In cutting through the potato, we could see that the interior was cooked and mealy, while the skin was as yet untouched. We could clearly trace the lines of current passage by the degree of cooking. Prolonged cooking would dry out the very centre in a straight line, while the rest of the potato was still moist and steaming. We could utilize this principle in practice. We could heat an organ to any degree.

Dr. Branth had utilized a Tesla coil energized by a Toepler-Holtz static machine of remarkable efficiency, and he had constructed this himself. The current thus obtained was one of high potential and high frequency. By using a glass vacuum electrode attached to one end of the spiral and a metal electrode to the other end, he had a current capable of very deep penetrability and of marked warming effect. The first effect noted at the point of application of the glass vacuum electrode was marked anemia, which was quickly followed by erythema and intense scarlatinioform redness of long duration. If we applied an intense irritant to the skin (and we could do this by this glass vacuum electride) we would find the sentitiveness of the skin was much increased, while the feeling of pain soon diminished. The circulation in distant organs was influenced. By reflex action, vasomotor, sensory, and motor nerves, glands and involuntary muscular fibre were stimulated. Organs which were deeply seated were relieved of congestion by producing hyperemia of the skin. Again, as the result of the heating effect produced by the molecular bombardment of this oscillatory current as it rushed through the tissues, we created centres of heat in every vital cell. As a further result of this heat we had an intensification of the circulation, arterial in kind. The arterioles became much dilated and the venous engorgement was relieved by a stimulation of the vasoconstrictor nerves, resulting in an attenuating effect on the abducting vein. The normal cellular activity was aroused as the result of the heightened nutrition made possible by the greatly increased flow of arterial blood. As a result of the altered vascular supply the morbid interstitial tissue was subjected to an altered nutrition and disappeared. The pressure being released, especially in these hepatic cases, the flow of blood was guided into normal channels. It was thus that Dr. Branth achieved his wonderful results. Dr. Branth deserved the commendation of all for having the courage to apply these methods to those desperate cases, very few of which had ever recovered under any method of treatment.

Dr. Albert G. Geyser said that the cases presented by Doctor Branth spoke for themselves, and therefore called for no discussion on his part. The technical part of the paper, however, afforded much opportunity for elucidating remarks. Time would hardly permit him to take up any other point than the title of the paper. Much had been said concerning high tension, high frequency, step up transformers, high voltage and low voltage, and dielectrics. With the permission of the president, he desired to illustrate upon the blackboard the meanings of these various terms that seemed so confusing to the average listener. Doctor Geyser then went on to say that if energy were applied to a piece of steel spring fastened to a holder, so as to bend it from its normal upright position to an angle of 45° and keep it there, we had by the expenditure of energy produced in the spring a form of kinetic or stored energy which when released was turned into dynamic or moving energy. The effect of this dynamic energy caused the spring to vibrate or oscillate from one side of its centre or normal position to the other, until, as the oscillations grew smaller and smaller, they came to rest. The same amount of energy that was originally bestowed upon the spring was now returned to us in the form of oscillations. If this stored energy of the spring should be released in a vacuum, instead of in the air, the vibrations would continue longer, on account of the lessened resistance. It would now be apparent that the farther the spring was originally forced from its normal position, the greater would be the tension, or pressure. If we placed upon either side of the spring a limiting buffer, so that the spring could only be bent from its path, say, one inch, we would then have only as much tension or pressure as the bending of one inch would create. This, then, was high or low tension in the spring. We had an exact analogy in electricity. Whenever a current was induced through a nonconductor (dielectric) into some electrical capacity, stress, strain, pressure, tension, or voltage was set up in that capacity. The capable voltage or tension depended upon the number of turns and other conditions in the secondary capacity, if that capacity happened to be a coil of wire. If the primary current emanated from a static machine, the size or the diameter of the revolving plates decided the tension or voltage. The source, either a coil transformer or static machine, was analogous to the steel spring in which was stored kinetic energy. From this source we had two conductors, and connected with each was an adjustable spark gap. The two buffers placed upon either side of the steel spring represented this sparkgap, just as these buffers created the extent of the tension in the spring, so did the sparkgap limit or control the tension or voltage in the electrical circuit. No more voltage could be created within this circuit than was necessary to break down this resistance of the sparkgap. As soon as the voltage or tension had risen to the proper height to cross the intervening airgap, that moment a spark or series of sparks passed, and equalization or rest was restored in the tension of the electrical circuit. As we passed further down from the sparkgap the conductor came in contact with the inner lining of the condensers or Leyden jars. One conductor was the plus (+) or positive, while the other was the minus (—) or negative pole. This inner side of the Leyden jar became an extension of the conductor, and so became a capacity charged with the same kind of electricity as the conductor. The inner side of one jar became loaded with the positive, the other with the negative kind. The glass wall of the Leyden jar acted as a nonconductor or dielectric, and the same phenomenon happened as before. By the process of induction, the same amount and the same stress, tension, or voltage was set up in the outer coating of the jar, but of opposite polarity. The inner plus jar induced the outer capacity to become negatively laden and *vice versa*. If now a coil of wire consisting of a certain number of turns, in accordance with the rest of the apparatus, was connected to the outer coatings of the jaws, we had constructed a D'Arsonval apparatus. Two conductors were led from this spiral to the patient. Each time that the outer coatings were charged with the induced current they tended to discharge themselves—tended to an equalization of their stress or tension, with the same result as in the case of the original steel spring. Oscillations were thus set up, large in amplitude at first, and gradually getting smaller until they died out entirely. Then a new set of such oscillations followed. It had been estimated by the electrical experts of the wireless system that 200,000 of such discharges may take place per second, each discharge consisting of from 100 to 500 oscillations: giving us several million oscillations per second. Hence the term high frequency.

Some Newer Methods of Treatment for Malignant Disease; with Demonstration of Lantern Slides and Cases.—Dr. William Seaman Bainbridge preceded the presentation of patients and the lantern slide demonstration with a few introductory remarks concerning the work

of the Committee on Scientific Research of the New York Skin and Cancer Hospital in the testing of new methods, surgical and nonsurgical, for the treatment of malignant disease. At the present time he, with the assistance of his staff of expert research workers, was conducting investigations along several different lines. No final report could be rendered now with reference to any of these investigations, and the present demonstration was merely a report of progress. With this in mind, he spoke briefly of the work of the committee along the following lines: (1) Electrical: (a) Fulguration; (b) thermoradiotherapy; (c) electrocoagulation, thermopeneration, diathermy, etc. (2) Serological: (a) Vaughan cancer extract; (b) Skin and Cancer Hospital extract, etc. (3) Surgical: Ligation of pelvic arteries.

Lantern slide pictures of the de Keating-Hart fulguration apparatus, of the Doyen electrocoagulation apparatus, and of a large number of patients before, during, and after treatment by the different methods, were shown. Three patients were presented who had been treated, with remarkable results, by means of fulguration. The surgical procedure to which Dr. Bainbridge called special attention was the method of "the starvation ligature" in the treatment of so called inoperable cancer of the pelvis. He had employed this procedure in about fifty cases of advanced, irremovable cancer, sometimes in conjunction with the curettement of the diseased areas, sometimes in conjunction with one of the other methods to which attention had been directed. The serological treatment of cancer had received considerable attention on the part of the research staff of th Skin and Cancer Hospital, the results of which would be reported in due time. In closing, Dr. Bainbridge made a strong plea for humanitarianism in the treatment of cases of so called inoperable cancer, emphasizing the fact that in many cases which were ordinarily called inoperable much might yet be done to bring relief of suffering and prolongation of life by the application, according to the exigencies of the case, of one or more of the various measures now being empolyed at the Skin and Cancer Hospital, and to which he had briefly referred.

Dr. GORDON K. DICKINSON, of Jersey City, said that Dr. Bainbridge had the aptitude and capacity for working out such problems as those presented this evening, and that the Skin and Cancer Hospital was well qualified to offer the facilities necessary for the purpose. The work done at that institution he had had the opportunity of seeing in a number of instances. The superficial cases were almost always successful, but in the deeper seated ones the disease was apt to return and end fatally. In this connection he referred to a case of papilloma which had come under his observation, where the patient was relieved for a time, but eventually died. As to the treatment described, there was something more in electricity and this type of juice which they did not yet understand. They did feel, however, that a good deal of the success which had attended the fulguration method was due to the operative procedures before its application.

Dr. HERMAN J. BOLDT said he was simply astonished at the results accomplished, as portrayed upon the screen. Dr. Bainbridge, he thought, was to be particularly congratulated upon the manner in which he had combined these special forms of treatment with surgery. In the treatment of cancer we might never, perhaps, be able to decide upon any one specific, but it had been shown that we now had methods for curing a large proportion of cases, and in the others for relieving the pain and prolonging life. Personally, he believed that in serology there would be found a wider field of usefulness than in any other direction. In the cases Dr. Bainbridge had described and shown, however, he was convinced that no other treatment than that employed could have given such successful results.

Dr. WORTHINGTON SEATON RUSSELL said that in the case of Hodgkin's disease which had been shown upon the screen the patient had come to the skin and cancer hospital from another hospital where he was told that his case was hopeless. There were immense masses on both sides of the neck, and not only were the cervical glands enlarged, but also those of the axillæ and other parts. Up to the present he had had thirteen treatments. At first the treatments caused some systemic reaction, but later on there was no reaction; and he was now receiving massive doses. The various glands had become much reduced in size, and in some of them the enlargement had entirely disappeared. The man was a florist, and was able to work regularly at his business. What the ultimate outcome might be no one could say, but, at all events, the treatment would undoubtedly prolong the patient's life. The case of tumor in the lungs, x ray pictures of which had been shown, had received eleven treatments. It had been pronounced quite hopeless in a number of hospitals; yet this patient was now out every day and was able to do a certain amount of work. It was scarcely to be expected that he would be cured of his tumor, but his condition had certainly been greatly relieved. Very careful statistics of all these cases were being kept.

Dr. WILLIAM BENHAM SNOW said that the hot spark as delivered from a high frequency apparatus was not fulguration proper, but what might be, and was correctly, called *destructive fulguration;* while the desiccation method of Clark dried out the tissues and thus destroyed them. The long, cooled spark of de Keating-Hart did not destroy tissue, but acted as a stimulant, which overstimulated all of the tissues, to the extent that the cancer cells perished. The reparative process after its application was slow. During this there was a profuse discharge of serum, of lymphorrhea, in the course of which the cancer cells perished. As to Hodgkin's disease, he had seen a case, treated by Dr. Herman Grad, in which there was extensive enlargement of many of the glands in the neck, axilla, and groin. Under x ray treatment they all disappeared, but at the same time the number of red blood cells became more and more reduced until death ensued. He would like to know if in the case shown on the screen, and further described by Dr. Russell, there had been any change of this kind in the blood count. He was much pleased to observe the tendency at the present time to the joint use of surgery with the x ray and other electrical measures, a plan which he had advocated for years. In regard to the removal of the lymphatic glands, he thought that in all cases only the enlarged glands should be removed, because they were defenses retarding extension in case of recurrence. The removal of the glands of the axilla, and beneath the pectoral muscle, was often too radical, when the x ray or fulguration could be used in addition to surgery. He hoped that the method described by Dr. Bainbridge would lead to the conclusion that it was not advisable to remove other than the diseased glands.

Book Reviews.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

Anatomische Grundlagen wichtiger Krankheiten. Fortbildungsvorträge aus dem Gebiet der pathologischen Anatomie und allgemeinen Pathologie für Aerzte und Medizinalpraktikanten. Von Dr. LEONARD JORES, Professor der pathologischen Anatomie an der Kölner Akademie für praktische Medizin. Mit 250 Abbildungen im Text. Berlin: Julius Springer, 1913. Pp. xii-382.

As Doctor Jores states in his introduction, this volume is intended primarily for the graduate physician and not for the undergraduate student. It deals with the pathological changes occurring in the special tissues and organs, and as only the essential and well recognized changes are mentioned, the different matters are very ably presented. Whether one reads of the circulatory system, the lungs, or the genitourinary apparatus he is struck by the clearness and conciseness of the text. Although it does not profess to be a textbook on pathology, it nevertheless contains as much information as many more pretentious volumes. As the entire book is so good and the different sections so well treated, it is practically impossible to select any particular portion as being worthy of greater praise than the others. In addition to the excellent text are 250 valuable illustrations. These latter are particularly good, both in regard to selection and to presentation. The book is one that cannot be too highly recommended to those who wish a valuable addition to their library on the subject of special pathology.

Burdett's Hospitals and Charities for 1912. Being the Year Book of Philanthropy and the Hospital Annual. Containing a Review of the Position and Requirements, and Chapters on the Management, Revenue, and Cost of the Charities; an Exhaustive Record of Hospital Work for the Year; a Useful and Reliable Guide to British, American, and Colonial Hospitals and Asylums, Medical Schools and Colleges, Nursing and Convalescent Institutions, Consumption Sanatoria, Religious and Benevolent Institutions and Dispensaries. By Sir HENRY BURDETT, K. C. B., K. C. V. O. London: The Scientific Press, Limited, 1912. Pp. 952.

The present issue of Burdett's Hospitals and Charities constitutes the twenty-third year of publication of this valuable handbook. It contains as usual a great wealth of information for the English speaking world and has become during the years of its long career a valuable book of reference. Besides the usual introduction, it contains in its present form thirteen chapters, coinciding in number with the issue of 1911, but the arrangements of these chapters have become different. Chapter 13 refers to United States, Canada, Australasia, and India, for which countries it is very difficult to obtain information.

Der Unterleibstyphus. Von weil. Dr. H. CURSCHMANN, Professor an der medizinischen Klinik in Leipzig. Zweite, umgearbeitete und vermehrte Auflage. Herausgegeben von Dr. H. CURSCHMANN, in Mainz, und Prof. Dr. C. HIRSCH, in Göttingen. Mit 48 Abbildungen und 2 Kurventafeln. Wien und Leipzig: Alfred Hölder, 1913. Pp. viii-516.

This volume is one of the most recent additions to the splendid Nothnagel *System.* In the 500 pages devoted to this subject there is practically everything bearing upon the various phases and manifestations of typhoid fever. The first chapter deals with the etiology. The second discusses the pathology, in general also in regard to the individual organs and systems. A hundred and seventy pages are devoted to an analysis of the various symptoms, being followed by a hundred pages in which is taken up the course of the disease in its various forms. Diagnosis by means of bacteriological and serological methods is very thoroughly dealt with and constitutes a chapter of particular value to the laboratory worker, the various methods being given in full. Ways of prevention are briefly reviewed, and the topic is closed with a presentation of the treatment, the necessity of plenty of food being emphasized. An extra chapter deals with the diseases of the paratyphoid type. As might be expected this book is an excellent one. It is also somewhat unusual in its richness of references to foreign authors, American, English, and French.

Zur Klinik der Opsonine. Von Professor Dr. med. ALEXANDER STRUBELL. Mit 4 Abbildungen und 4 Tafeln. Jena: Gustav Fischer, 1913. Pp. vi-225.

This volume is of particular value in that it represents, not a review of the literature, but the work actually performed by the author and his assistants. As the technic of the method has become more clearly understood and better applied, the results obtained have become very trustworthy. The opsonic index is now of great significance in certain infectious diseases, not only in diagnosis, but in prognosis. The entire question of the opsonins is carefully gone into and the sources of error in estimating the opsonic index are given in detail. The index in tuberculosis receives a chapter, but the greater part of the book is devoted to the staphylococcus. The vaccine therapy, as employed in local infections by this organism, is given in great detail, and is illustrated by numerous actual cases. It is especially on account of this clinical aspect that the book can be highly recommended.

Glycosuria and Allied Conditions. By P. J. CAMMIDGE, M. D. New York: Longmans, Green & Co., 1913; London: Edward Arnold, 1913. Pp. vii-467. (Price, $4.50.)

As might be expected, a book on this subject by so well known an authority as its author covers the ground most thoroughly. In its 460 pages of text are included not only the conclusions to which Dr. Cammidge has come as a result of his own researches and observations, but also a general summary of the work of others. Inasmuch as glycosuria is essentially a chemical problem, that phase is first presented; then the pathology, symptomatology, diagnosis, and treatment are discussed. The author calls attention to the fact that up to the present the carbohydrates, other than dextrose, met with in the urine of diabetes have not received much attention at the hands of the clinicians. He believes it is probable that if they were more carefully investigated light might be thrown on the pathology of the condition. This publication on so interesting and important a subject is indeed a most valuable addition to medical literature. The matter is clearly put and, on account of the great experience of the author, must carry authority.

New Aspects of Diabetes. Pathology and Treatment. By Professor Dr. CARL VON NOORDEN, Professor of the First Medical Clinic, Vienna. Lectures Delivered at the New York Postgraduate Medical School, New York. New York: E. B. Treat & Co., 1912. Pp. 160.

This monograph is composed of the lectures delivered some time ago by the author in New York on Diabetes proper, and in St. Louis, on acetonuria. The subjects are treated in a fluent and easily understood manner, no quotations being introduced. It is a plain matter of fact review of the subject, very interestingly set forth but marred to a certain extent by poor translation. Such sentences as: "the adrenalin not only whips up the liver, but also the pancreas, causing it to hyperactivity, perhaps especially to hypertrophy of the still unhurt activating islands of Langerhans" are unfortunately not uncommon. Even the title "New Aspects of Diabetes" can hardly convey the meaning of the author, since the work contains nothing new, though it covers very satisfactorily the *modern* view concerning the disease and particularly as it is interpreted by the distinguished author. One can hardly fail to become impressed, moreover, with the confidence with which he deems settled questions which are still decidedly *sub judice,* the supposed antagonistic action between the thyroid and pancreas, concerning which he writes for example: "Here we are in no doubt whatever," whereas in truth the theory is an extremely weak one. The book as a whole, and particularly the section on treatment, is very satisfying, the latter particularly so, sustained as it is by the author's own great experience.

Meetings of Local Medical Societies.

MONDAY, *May 12th.*—Society of Medical Jurisprudence; New York Ophthalmological Society; Williamsburgh Medical Society, Brooklyn; New Rochelle Medical Society; Corning Medical Association; Waterbury, Conn., Medical Association.

TUESDAY, *May 13th.*—New York Academy of Medicine (Section in Neurology and Psychiatry); New York Obstetrical Society; Newburgh Bay Medical Society; Jamestown Medical Society; Rome, N. Y., Medical Society; Medical Society of the County of Schenectady; Medical Society of the County of Rensselaer (annual); Buffalo Academy of Medicine; Practitioners' Club of Jersey City, N. J.

WEDNESDAY, *May 14th.*—New York Pathological Society; New York Surgical Society; Medical Society of the Borough of the Bronx; Alumni Association of the City Hospital; Brooklyn Medical and Surgical Association; Richmond County Medical Society; Dunkirk and Fredonia Medical Society; Alumni Association of the Norwegian Hospital, Brooklyn.

THURSDAY, *May 15th.*—New York Academy of Medicine (stated meeting); German Medical Society, Brooklyn; Æsculapian Club of Buffalo; Newark, N. J., Medical and Surgical Society.

Official News.

United States Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending April 30, 1913:

Ebert, H. G., Passed Assistant Surgeon. Relieved from duty at the Marine Hospital, San Francisco, Cal.,

and directed to report to the medical officers in charge of the Immigration station, Angel Island, Cal., for duty. **Goldberger**, J., Surgeon. Detailed to represent the Service at the meeting of the American Society of Tropical Medicine at Washington, D. C., May 6 and 7, 1913. **Guiteras**, G. M., Surgeon. Detailed to represent the Service at the meeting of the State Medical Association of Texas, San Antonio, May 6 to 8, 1913. **Oleson**, Robert, Passed Assistant Surgeon. Directed to report to the medical officer in charge, San Francisco Quarantine Station, for temporary duty. **Parker**, H. B., Passed Assistant Surgeon. Granted four months' leave of absence from sailing of first steamer in June, 1913, from Guayaquil, Ecuador. **Rucker**, W. C., Assistant Surgeon General. Directed to proceed to Boston, Mass., and deliver an address before the Women's Municipal League on April 25th; also to address the graduating class of Tuft Medical College and the Bacteriological Society of Harvard College. **Young**, G. B., Surgeon. Granted leave of absence, without pay, for a further period of one year, from July 1, 1913.

Resignation.

Resignation of Assistant Surgeon N. D. Brecht accepted, by direction of the President, to take effect May 31, 1913.

Boards Convened.

Board of commissioned medical officers convened to meet at the call of the chairman for the purpose of preparing and recommending a revision of the regulations governing the uniforms of officers and employees of the United States Public Health Service. Detail for the board: Assistant Surgeon General A. H. Glennan, chairman; Assistant Surgeon General L. E. Cofer, member; Assistant Surgeon General W. C. Rucker, recorder.

Board of commissioned medical officers which was convened to meet April 7, 1913, for the examination of applicants for appointment as assistant surgeon, reconvened to meet May 5, 1913, for the same purpose.

Board of commissioned medical officers convened to meet at Manila, P. I., June 10, 1913, for the purpose of making a strict physical examination of candidates for appointment as assistant surgeon and of presenting to candidates the questions for the written examination. Detail for the board: Surgeon Victor G. Heiser, chairman; Surgeon W. A. Korn, recorder.

United States Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending May 3, 1913:

Appel, D. M., Colonel, Medical Corps. Left Chicago on April 24th en route to Hawaii, sailing on May 5th. **Beasley**, S. O., First Lieutenant, Medical Reserve Corps. Has resigned his commission in the medical reserve corps. **Beeuwken**, Henry, First Lieutenant. Will sail from San Francisco for the Philippines on August 5, 1913, instead of June 5th, as heretofore ordered. **Boehs**, C. J., First Lieutenant, Medical Reserve Corps. Relieved from duty with the Aviation School, Texas City, Texas, and will sail on August 5, 1913, for the Philippines. **Card**, Daniel P., Captain. Will proceed to Fort Ethan Allen, Vt., for duty upon expiration of his leave. **Clark**, John A., Captain. Will return to his proper station at Plattsburg Barracks, N. Y., for temporary duty at Fort Benjamin Harrison. **Davidson**, W. T., Major, Medical Corps. Granted twelve days 'leave of absence, about May 9th. **Denton**, William, First Lieutenant. Granted two months' leave of absence, about July 4, 1913. **Ferenbaugh**, Thomas L., First Lieutenant. Will report to the commanding officer of the Walter Reed General Hospital for observation and treatment. **Gills**, William A., First Lieutenant, Medical Reserve Corps. Relieved from further duty in the Medical Reserve Corps, and honorably discharged, his services being no longer required. **Kramer**, Floyd, First Lieutenant. Assigned to duty with the medical superintendent, San Francisco, for duty in the Army Transport Service. **Miller**, C. N., First Lieutenant, Medical Service Corps. Has resigned his commission in the medical reserve corps. **Reddy**, J. J., First Lieutenant. Left Grandville, Pa., on April 29th, for San Francisco, sailing therefrom on May 5th for duty in the Philippines. **Register**, E. C., First Lieutenant. Left Fort McPherson, Ga., on April 26th, for San Francisco, and will take the transport from that place at a later date for the Philippine Islands. **Reynolds**, F. F., Major. Granted fifteen days' leave of absence before sailing for Hawaii on June 5th. **Robinson**, James L., First Lieutenant. Relieved from temporary duty with the 26th Infantry and will return to his station in Fort Wayne, Mich., about May 5th. **Shields**, William S., Captain. Left Columbus Barracks, Ohio, on April 5th, on twenty-one days' leave. **Sparrenger**, F. H., and **Wall**, F. M., First Lieutenants, Medical Reserve Corps. Relieved from duty in the Philippine Islands and will return to the United States for further orders.

United States Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending May 3, 1913:

Clifford, A. B., Passed Assistant Surgeon. Ordered to the Naval School, Washington, D. C. **Warner**, R. A., Passed Assistant Surgeon. Detached from duty on the *Yankton* and ordered home to await orders.

Births, Marriages, and Deaths.

Married.

Browne—Gibbs.—In Bryn Mawr, Pa., on Wednesday, April 30th, Dr. Charles Browne, of Princeton, N. J., and Miss Georgiana Gibbs. **Comstock—King.**—In Brooklyn, N. Y., on Saturday, April 26th, Dr. Carl Rodney Comstock, of Saratoga Springs, and Miss Ethel King. **Freeman—Freeman.**—In Trenton, N. J., on Sunday, April 27th, Dr. Samuel Freeman and Miss Fanny Freeman. **Jacobs—Price.**—In Philadelphia, on Thursday, April 24th, Dr. Francis Brinton Jacobs and Miss Phoebe A. Price. **Nelles—Robie.**—In Chicago, on Tuesday, April 22nd, Dr. J. M. Nelles and Mrs. Anna Robie.

Died.

Bailey.—In Middletown, Conn., on Monday, April 28th, Dr. Leonard Bailey, aged seventy-eight years. **Bliss.**—In Philadelphia, on Friday, May 2nd, Dr. Arthur Ames Bliss, aged fifty-four years. **Carson.**—In Chatsworth, Ill., on Saturday, April 26th, Dr. George T. Carson, aged fifty years. **Denbo.**—In Mauckport, Ind., on Monday, April 21st, Dr. William R. Denbo, aged sixty-five years. **Dickinson.**—At Cobleskill, N. Y., on Tuesday, April 29th, Dr. Charles Dickinson, aged eighty years. **Emerson.**—In New York, on Sunday, May 4th, Dr. J. Haven Emerson, aged seventy-three years. **Fenwick.**—In Chelsea, Mass., on Friday, April 25th, Dr. Joseph B. Fenwick, aged seventy-five years. **Freutel.**—In New York, on Tuesday, April 29th, Dr. August J. Freutel, aged thirty-six years. **Garceau.**—In Boston, on Tuesday, April 29th, Dr. Edgar Garceau. **Grady.**—In Quincy, Ill., on Tuesday, April 22nd, Dr J. H. Grady, aged seventy-one years. **Graham.**—In Kansas City, Mo., on Saturday, May 3d, Dr. Alice Graham, aged fifty-three years. **Hunter.**—In Kansas City, Mo., on Tuesday, April 22d, Dr. Duke W. Hunter, aged eighty-three years. **Kahn.**—In New York, on Thursday, May 1st, Dr. Hermann Kahn, aged seventy-nine years. **Kendall.**—In Ruston, La., on Tuesday, April 15th, Dr. W. S. Kendall. **Kinnicutt.**—In New York, on Friday, May 2nd, Dr. Francis Parker Kinnicutt, aged sixty-seven years. **Knight.**—In New York, on Tuesday, April 29th, Dr. Charles Huntoon Knight, aged sixty-four years. **Noble.**—In Preston, Md., on Tuesday, April 29th, Dr. Jacob L. Noble, aged sixty-four years. **O'Neal.**—In Gettysburg, Pa., on Thursday, April 24th, Dr. J. W. C. O'Neal, aged ninety-two years. **Thorne.**—In San Francisco, on Tuesday, April 22nd, Dr. Walter S. Thorne. **Timmins.**—In Boston, on Sunday, May 4th, Dr. Patrick J. Timmins, aged sixty-two years. **Upson.**—In Rome, Italy, on Thursday, April 24th, Dr. Henry Swift Upson, of Cleveland, Ohio, aged fifty-four years. **Walker.**—In Union, Neb., on Thursday, April 24th, Dr. Alexander Walker, aged forty-two years.

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VENEREAL DISEASES.*

The Attitude of the Department of Health in Relation Thereto.

By Hermann M. Biggs, M. D.,
New York,
General Medical Officer, Department of Health.

On February 20, 1912, the Board of Health of the City of New York adopted a series of resolutions requiring the full notification of all cases of venereal disease from public institutions and requesting physicians to notify their private cases by number. The board also provided for the application of the Wassermann test for syphilis, the complement fixation test for gonorrhea, and for the examination of fresh smears for spirochetes and gonococci. This action was taken after very mature deliberation and with some reluctance and only after the proposal had been unanimously approved by the medical advisory board.[1] The subject had been under discussion for more than three years, and the board of health fully realized the many difficulties of the problem presented in the sanitary surveillance of these diseases. The resolutions were finally adopted only after the Board of Estimate and Apportionment had provided funds for the erection of a pavilion at Riverside Hospital for the care of such cases of venereal disease as the department of health might be called upon to isolate and treat.

The board was influenced in taking the action, as described above, by the following considerations:

First: The venereal diseases are infectious and highly communicable. They are also preventable. They constitute a very serious menace to the life and health of the people of the city of New York. The board of health is charged by law with the control and prevention of such diseases. The logic of the situation, therefore, demanded that action should be taken.

Second: As is well known, sanitary authorities in the past have not attempted to deal with these diseases, because the sanitary problems have been inextricably interwoven with vice and immorality, and because many attempts have been made to deal with the latter problems in many cities in various parts of the world by police regulations. The moral sense of the community here has seemed to be antagonistic to any efforts at police regulation, and, moreover, the methods adopted abroad have generally given most unsatisfactory results.

Third: Although no serious attempts have ever been made by the sanitary authorities of a great city to deal with this problem, yet as it seems to be the almost universal opinion that police regulations have generally failed, after careful consideration, the board of health decided that it was the duty of the Department of Health to attempt to deal with the purely sanitary features of the problem from the public health standpoint, while the social and moral phases were entirely ignored.

Fourth: It was believed by the board of health that the more enlightened portion of the medical profession and of the laity were in an attitude of mind, not only to accept without serious protest an earnest attempt at an improvement in existing conditions through the application of scientific sanitary procedures, but to extend general support and commendation to such a course.

The resolutions adopted by the board of health read as follows:

Whereas, The venereal diseases are infectious, communicable, and preventable, and constitute a serious menace to the public health, thus properly coming under the charge of the public health authorities, and

Whereas, It is well established that no administrative control of such diseases is possible without a system of notification and registration, associated with provision for the municipal care of patients unable or unwilling to place themselves under proper medical care and to take the precautions necessary to prevent the infection of others, be it therefore

Resolved, First: That on and after May 1, 1912, the superintendents or other officers in charge of all public institutions such as hospitals, dispensaries, clinics, homes, asylums, charitable and correctional institutions, including all institutions which are supported in whole or in part by voluntary contributions, be required to report promptly the name, sex, age, nationality, race, marital state, and address of every patient under observation suffering from syphilis in every stage, chancroid, or gonorrheal infection of every kind (including gonorrheal arthritis), stating the name, character, stage, and duration of the infection, the date and source of contraction of the infection, if obtainable, and,

Second: That all physicians be requested to furnish similar information concerning private patients under their care, excepting that the name and address of the patient need not be reported.

Third: That all information and all reports, in connection with persons suffering from these diseases, shall be regarded as absolutely confidential, and shall not be accessible by the public nor shall such records be deemed public records.

Fourth: That the Department of Health shall provide facilities for the free bacteriological examination of discharges for the diagnosis of gonorrheal infections, and

*Read at a stated meeting of the New York Academy of Medicine, February 20, 1913.

[1]The members of the advisory board were: Dr. Joseph D. Bryant, Dr. William M. Polk, Dr. Abraham Jacobi, Dr. T. Mitchell Prudden, Dr. A. Alexander Smith, Dr. J. Winters Brannan, Dr. John A. McCorkle, Dr. Francis P. Kinnicutt, Dr. L. Emmett Holt, Dr. Gleutworth R. Butler, Dr. Simon Flexner, Dr. Walter B. James, and Dr. Alvah H. Doty.

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also shall provide, without charge, vaccines for the treatment of such infections, and

Fifth: That the Department of Health shall undertake to make, without charge, the Wassermann and Noguchi tests for the diagnosis of syphilis and examine specimens for spirochetes.

Sixth: That these diagnostic and therapeutic facilities be extended only when the data required for the registration of the case be furnished by the physician treating the patient, and

Seventh: That the department provide and distribute circulars of information in relation to these diseases.

The initial step taken by the board of health for the control of these diseases was essentially the same as that previously followed with reference to pulmonary tuberculosis, excepting that the measures are more restricted in character in connection with the venereal disease. A compliance with the new regulations has been perhaps less general even than was the case in the beginning with reference to pulmonary tuberculosis, and the opposition has been greater.

The superintendents and the boards of trustees of some of the larger institutions of the city have failed to comply with the new regulations of the department, excusing their action on the ground that the notification of cases as required by the Department of Health involves so much clerical work that it is impossible for them to comply, as the physicians cannot do the work and no clerical staff is available for this purpose. Other institutions have declined to report their cases because they were not in sympathy with the purpose and spirit of the regulations.

The existence of large numbers of cases of venereal disease, and the terrible effects produced by them, is universally admitted. Still the medical boards of three large hospitals of the city have appointed committees to protest against the attitude of the Department of Health, and a joint committee representing them has addressed a communication to His Honor the Mayor, asking for his interference.

Such opposition and such criticism were fully anticipated, and much more is likely to follow. The progress of sanitation, like the warfare of science, has been the history of a continuous struggle against opposition, carried on in the name of law, religion, personal rights, or expediency. The history of this struggle, like that of previous ones in science and sanitation, will end finally in a long delayed success, although the difficulties of the problem presented are much greater than has been the case in most previous instances.

In connection with the opposition which has developed to the action of the Department of Health, and the attitude which has been adopted by some authorities, it may be well to recall the history of the experience of the department in its tuberculosis work. The movement for the prevention of tuberculosis, which has long since become worldwide, was inaugurated by the New York City Department of Health in 1887, when Dr. Joseph D. Bryant was commissioner of health. It did not gain much impetus, however, until 1893. Active work began in 1894, when 4,166 cases of pulmonary tuberculosis were reported from the old city of New York and 511 specimens of sputum were examined; premises vacated by tuberculous patients were disinfected, and an extensive educational campaign was inaugurated.

It may not be amiss to recall the fact that as late as 1898 and 1899, special legislative committees were appointed by the New York County Medical Society and by the New York County Medical Association, which were instructed to obtain a repeal of the Act of the Legislature under which the Department of Health derived its power to deal with the tuberculosis problem. A special committee was also appointed by the Academy of Medicine, which, after prolonged deliberation, declared "the action of the Department of Health, with reference to tuberculosis, as inexpedient and inadvisable." I think, in view of the history of the campaign since that time and the present attitude of the public and the medical profession toward tuberculosis, it may properly be said that the action of these committees was ill advised.

I believe that ultimately the result will be the same with reference to the sanitary surveillance of the venereal diseases, now under discussion, but I realize as fully as anyone can the enormous difficulties presented by the problem.

Nearly twenty years ago, the board of health of New York city adopted a policy in relation to the control of infectious, communicable, and preventable diseases. In effect it determined that every such disease properly came under its jurisdiction, and that any measures which contribute to the prevention, accurate diagnosis, proper sanitary surveillance, or the specific treatment of such diseases, become properly a function of the Department of Health. The board has consistently followed this policy.

I believe that the attitude of the board toward the venereal diseases is practically governed by this statement of its policy. It is prepared to register venereal diseases, to provide hospital care for those patients who cannot obtain care elsewhere, to assist in every way in its power in the diagnosis and sanitary surveillance of such diseases, and only *if necessary and only so far as it seems necessary*, will it undertake the treatment of these diseases.

An investigation made last year showed that with perhaps one or two exceptions, the public clinics and dispensaries in this city did not *regularly* follow modern methods for the diagnosis and treatment of syphilis. As it has been satisfactorily shown, in the opinion of the board, that early cases of syphilis in which the diagnosis is made by the examination for spirochetes, before the appearance of secondary symptoms, can be cured in the course of a few months, while in most cases subsequently the treatment must often be continued for years with even then a doubtful result, the board of health felt that it was incumbent upon it to provide means for such treatment, if the Board of Estimate and Apportionment would furnish the funds. The board of health, therefore, asked for funds to establish a clinic for the early diagnosis and specific treatment of syphilis, viz., by the administration of salvarsan. The Committee of the Academy of Medicine on Budgets and Hospitals did not approve of this action of the board of health, and insisted that efforts should be made to induce existing institutions

to discharge their duty in this matter. The board of health, in view of this attitude, did not strongly press its request, and funds for the clinic were not granted.

I think that the medical profession and the laity do not fully understand what the attitude of the Department of Health is and has always been toward this and similar questions. The department does not desire and has never desired to assume any responsibility, nor do any work which is being properly done by any other authorities or agencies. The board has always received coldly the numerous suggestions made at various times to place under its jurisdiction other functions which, it believed, did not properly belong there, such as the administration of the general public hospitals of the city, the work of the coroners, etc. The department does not wish *to treat* the venereal diseases if some other authorities will furnish proper and adequate facilities for this purpose.

Early in January of this year, a circular letter was sent to every physician in New York city, requesting him to report the number of cases of venereal disease which had been under his care during the year 1912. Up to the present time, the number of cases reported is as follows:

Syphilis	13,348
Gonorrhea	24,980
Chancroid	4,331
Total	42,659

Let it be understood that these represent only the cases reported by 1,500 private physicians out of more than 8,000 in the city and do not include those treated in public hospitals, dispensaries, etc. They naturally indicate only a small proportion of the cases actually under the care of the physicians of this city during the year. It is probable that a large percentage of these cases were in the active, infectious stage. I think that 200,000 would be much nearer the real number of cases developing in the city during 1912. These figures give a very inadequate conception of the character of the problem which is presented by the venereal diseases and its enormous importance to the health, happiness, and physical welfare of the people of the city of New York.

The Department of Health established a diagnosis venereal clinic in July, 1912, at the research laboratory at the foot of East Sixteenth Street, where it was conducted until about the first of January last, when it was transferred to the main offices of the Department of Health and connected with the diagnosis laboratories. Patients are examined only when they come with a request from the attending physician, unless the chief of the clinic can be convinced that there is no attending physician. The reports of the results are furnished *only* to the attending physician. A large percentage of the examinations consist in the application of the Wassermann test. Early in January, an evening diagnosis clinic was established at 307 West Thirty-third Street, for the accommodation of persons who could not well leave their work during the day. This is held at present only one evening a week.

The total attendance since January 1st at the main clinic is 1,275, and has averaged sixteen a day, while at the night clinic the average has been six. The average number of cases reported daily, exclusive of the clinic, since the first of January, has been thirty-seven. We feel confident that the facilities offered by the Department of Health at these clinics for the diagnosis of these diseases will be much more widely used as soon as physicians have become gradually acquainted with their existence and usefulness to them.

I do not think that the importance of the educational influence of such bacteriological work can be overestimated, and this opinion is emphasized when one recalls the fact that but few dispensaries or outdoor departments in New York city were regularly doing such work last year. I do not know what the situation is in this respect at the present moment. The application of the tests for the diagnosis of the venereal diseases requires time, experience, and adequate training; services which are not at the disposal of the poor, and the type of laboratory facilities which are generally not at the command of public dispensaries.

The line of development which the work of the Department of Health is likely to take cannot, as yet, be foretold, as this must depend upon many factors and conditions at present undetermined. I think that it is fairly certain, however, that the work in the diagnosis of these diseases will develop rather rapidly. Perhaps next to the bacteriological examinations and in connection with registration, the most important feature of the work will be, as was the case in tuberculosis, educational in character. It seems to me fairly clear that this is certain to be a very important phase of the campaign.

The institutional care of active, highly infectious cases of the various forms of venereal disease, is bound largely to increase. It is certainly most discreditable to the great city of New York that thus far only a few beds in two hospitals have been assigned to the care of these diseases. As they are infectious and readily communicable and most dangerous to the public health, I believe the Department of Health is under obligation to provide institutional care, unless some other authorities take action in this matter. I have already said, the department has received funds to provide hospital beds for a limited number of cases.

No one who is familiar with the problem, I believe, has any doubt that prompt and efficient treatment will cause a very large reduction in the number of cases in which disability or death, directly or indirectly, result from venereal disease.

CONCLUSION.

It may be briefly said that the policy of the Department of Health toward these diseases, at present, comprises the following:

First: The development and extension of the system of registration as at present conducted.

Second: The provision of adequate facilities for the early diagnosis and general supervision of all forms of venereal disease.

Third: The institution of an extensive campaign of education in relation to sex hygiene, and the causes, prevalence, danger, and the results of such infections and the means for their prevention and treatment.

Fourth: The provision of hospital accommoda-

tions for such cases as constitute a menace or which can find no facilities elsewhere for their care.

It is the firm conviction of those who have given much thought to this subject that by these and other similar measures, which may be later developed, a very important decrease may be brought about in the amount of sickness and death, directly or indirectly produced by the venereal diseases. It was this conviction which influenced the board of health in the adoption of the resolutions referred to in the beginning of this article.

I venture to say that when the antituberculosis movement began in this city some twenty years ago, no one anticipated the vast organization of social forces that would be developed to cope with this disease. As the campaign progressed, first one and then another agency was enlisted, and as the problems presented themselves they were met in the light of existing knowledge and experience. Exactly the same situation confronts us in the control of the venereal diseases, and while the initial steps seems quite clear, I do not for a moment hesitate to say that the further development of the campaign must await further knowledge—knowledge to be obtained only through the results of experience.

Department of Health.

DISPENSARY FACILITIES FOR THE TREATMENT OF SYPHILIS.*

By Homer F. Swift, M. D.,
New York.

In the general movement to render outpatient diagnosis and treatment, especially the latter, more efficient, the question of dispensary facilities for the treatment of syphilis holds naturally an important place. The need of improvement in the case of this disease is, however, especially urgent, since the study of syphilis in the past ten years has entirely altered our conceptions of its treatment. With these advances the outpatient departments of most of our hospitals have not kept pace, so that to-day their treatment varies little from that of five years ago, except that a few patients receive a small number of injections of salvarsan.

The problems of the outpatient treatment of syphilis are peculiar to this disease. Most of the patients in the early stages are not incapacitated, and syphilis, therefore, lends itself peculiarly to dispensary treatment. It would be better, however, to have many of the patients in the wards of hospitals for a certain time, and the ambulatory treatment of the disease is only one phase of the problem.

In considering the subject of dispensary treatment, we will divide it into two parts, namely, the organization of the individual clinic, and the general organization of clinics.

THE INDIVIDUAL CLINIC.

Up to the present time the distribution of patients has been left to the admitting clerk, who has divided them into various classes with the result that the room to which the patient was first sent has usually continued to be his place of treatment. For example, the genitourinary room receives the patients with primary syphilis, the dermatological room the patients with secondary and tertiary cutaneous lesions. The ophthalmologist treats the patients with iritis, keratitis, chorioiditis, and optic atrophies, and the otologist those with auditory neuritis or atrophy. The neurologist and the internist, on the other hand, treat the patients with nervous and visceral syphilis. The result of this classification has been that syphilis is regarded as a congeries of different symptoms and not as a disease. The prevalence of this view has resulted in the symptomatic treatment of syphilis, and when the symptoms disappeared the treatment was discontinued. The patient disappeared from view to return later, perhaps, to some different room in the same dispensary.

Syphilis is syphilis no matter where it is localized. The symptoms of syphilis are often mechanical. These mechanical manifestations demand the attention of the specialist for the particular organ involved, but the treatment of the disease is essentially the same. The drug which causes the disappearance of a roseola will cure an iritis. If we accept this view of the treatment of syphilis as syphilis and not as one branch of many specialties, the advisability of a room specially equipped, both with men and apparatus, for the treatment of the disease is at once evident. Just who will be at the head of this room will have to be determined in the individual clinic. Syphilis is a genitourinary disease practically only in the primary stage in men. In women in this stage treatment is carried out by the gynecologist, or in the majority of instances the disease is untreated until it reaches the secondary stage. Because many of the genitourinary specialists are more interested in the surgical side of their specialty than in medical treatment, and because syphilis more often falls into the hands of the dermatologist than under the care of any other one specialist, it might be better for the dermatological department to supervise the diagnosis and treatment. The fact that the disease involves so many of the special organs makes it almost necessary to have the help of the ophthalmologist, the laryngologist, and the otologist. The neurologist and the internist might well be included in the staff of this special room. With a consulting staff consisting of members of all the specialties, the clinical diagnosis would be well looked after.

The development in laboratory diagnosis in the last few years has made it imperative that proper laboratory facilities should be at hand for diagnosis. In the primary stage the dark field microscope is essential to an early diagnosis. If the disease is ever to be eradicated, an early diagnosis of syphilis must be made in the majority of cases. For a period of about two weeks during the primary stage, many patients are suffering from a simple local infection. During this time exact diagnosis is possible in the majority of cases only by means of demonstration of *Treponema pallidum*. Examina-

*Read at a stated meeting of the New York Academy of Medicine, February 20, 1913.

tion with the dark field microscope is one of the simplest procedures in clinical microscopy. The obtaining of serum from the initial lesion, placing it on a slide, covering with a cover glass, and direct examination will reveal spirochetes in practically one hundred per cent. of early untreated chancres.

The necessity and importance of such a diagnosis is little realized by the majority of physicians. Today one often hears that the simple clinical examination is sufficient to make a diagnosis. Genitourinary surgeons have stated that practically fifty per cent. of chancroids develop later into chancres, followed by secondary syphilis. This large proportion of mixed sores could be accurately diagnosticated were a dark field examination made from the serum of every genital ulcer. How little this important procedure is employed is well illustrated by reports from a number of clinics in this city. In eighteen dispensaries[1] where primary syphilis is treated, spirochete examination is used as a routine in only five, in ten occasionally, and in three not at all. In only five is there a dark field miscroscope. In only five out of the eighteen clinics is it customary to make an early diagnosis and institute treatment before the appearance of a positive Wassermann reaction. It is time that the dark field microscope be regarded as a practical instrument and not as a toy for the laboratory worker. The methods of staining of spirochetes, which are much slower, are not often used. Every dispensary should have a dark field microscope which is always ready for use. The examination can then be made in from three to five minutes and proper treatment at once instituted.

The introduction of salvarsan has made this early diagnosis of much more relative importance than formerly, because the successful abortive treatment of the disease in the primary stage, before the general invasion of the body with the virus, is now possible. This phase of the subject of treatment has been most carefully followed, and in spite of what one may hear to the contrary, the successful abortive treatment of syphilis in this stage has been shown to be possible.

The Wassermann reaction has proved to be one of the most useful diagnostic measures at our disposal. Where formerly we were guessing at the nature of a given lesion or condition, we are now able to state with a fair degree of accuracy whether the condition is syphilitic or not. Every dispensary should therefore have attached to it an efficient Wassermann laboratory. The reaction is of use, not only as a diagnostic measure, but indicates to some extent the condition of the disease at a given time. In the primary stage the development of a positive reaction means a general invasion with the virus; hence, if present, the treatment, which earlier had to be directed against a local lesion, must be directed against a general infection, and must therefore be more extensive. The Wassermann reaction is also a most useful guide in the control of treatment. While a negative reaction does not mean that the patient is necessarily cured, a positive reaction does mean that the disease is still present somewhere in the body. If treatment is to be, not symptomatic, but carried out until the disease is eradicated from any individual, it must be continued until a negative reaction is secured and maintained.

The treatment of syphilis would be much more efficiently carried out in one department. The many forms of mercury have resulted in as many variations in treatment. Probably no disease is so inefficiently treated in proportion to the efficacy of our therapeutic measures. As has been mentioned, this is partially due to the fact that it has been symptomatic. It is partially due to the fact that it has not been systematic. One patient has been given a boxful of protoiodide pills, another patient a bottle of mixed treatment, a third blue ointment, and a fourth some injections. All of the treatments resulted in the removal of symptoms for a time, so that one man argued about the superiority of his treatment with as much authority as another. The more careful study of the relative efficacy of treatment has shown that the best forms of treatment, namely, inunctions or injections of mercury, in the opinion of such an excellent authority as Neisser, cured much less than fifty per cent. of the patients. What must have been the result from the chronic dispensing of pills?

The introduction of salvarsan has changed the attitude of careful workers as to the curability of syphilis. One of the most unfortunate incidents connected with the introduction of salvarsan was the statement that one or two injections would cure. The failure of one or two injections to cure has resulted in the disappointment of many physicians and has caused them entirely to reject this most valuable drug. No results based on the injection of two or three medium sized doses of salvarsan can be accepted as disproof of its efficiency. We must rather accept the work of such men as Fordyce, Gennerich, Neisser, Wechselmann, Milian, and others, who have had abundant material and a wide experience in the treatment of this disease, and who depend so much upon the repeated application of salvarsan in their treatment.

At the present time no dispensary can consider that it has done its duty by the patients who place themselves under its care without the administration of salvarsan in sufficient quantities. The investigations of the past two years have shown that it is necessary to administer this drug in courses of intravenous injections. Such courses should consist of five or six injections at intervals of from five to seven days. The treatment of secondary syphilis with one or two injections without further treatment cannot be too strongly condemned. Such treatment alters the body reactions so that relapses are at times more severe than in patients poorly treated with mercury. In addition, the patient has a false sense of security and wastes much valuable time as well as the benefit of the treatment already received. It has been fairly well shown that a course of salvarsan is much more effective if it has been preceded by a course of mercury intramuscularly or by inunctions. This preliminary mercury treatment also eliminates the probability

[1]These figures are furnished through the kindness of Doctor Lewinski-Corwin as a part of the Report on the Investigation of Dispensary Facilities for the Treatment of Venereal Diseases.

of a febrile reaction, which so often follows the first intravenous injection of salvarsan in florid syphilis, and thus renders much safer the administration of salvarsan in dispensaries.

While the intravenous injection of salvarsan is not a serious operation, it should be carried on under proper conditions. Absolutely freshly distilled sterile water is necessary for the solution of the drug and the preparation of the salt solution. The strictest asepsis is necessary in the preparation of apparatus for the injection. The needles and rubber tubing should be washed and sterilized in freshly distilled water. By close attention to all of these details the administration of salvarsan is accompanied by fewer toxic symptoms than follow the intramuscular injection of mercury.

The great care necessary for the proper administration of salvarsan renders a special room almost essential. If each department in a dispensary tries to administer the drug, there is a great loss of time and efficiency. With the same effort in a given time more than double the number of treatments can be carried out in a special room than in several poorly prepared places. Even the intramuscular injections of mercury can be more effectively given where the apparatus is kept in proper condition in a central place. The centralization of treatment will lead to more efficient treatment, because the methods will be more uniform and larger groups of patients in relatively the same stage of the disease may be followed. The failures of a certain course will be more evident and the plan can be altered in the light of new facts gathered by careful study.

Some uniform plan for the instruction of patients in the nature of their disease should be adopted. Patients should understand that symptomatic cure is not sufficient, and that one or two or four injections of salvarsan do not cure the majority of patients. They should be told of the increasing difficulty of cure as the disease progresses, and of how much time and money are wasted by stopping treatment too soon. If a patient or the dispensary has invested fifteen or twenty dollars in his treatment, it is poor economy to stop the treatment and allow him to pass on into a condition where fifty dollars' worth of drugs will not cure, when the additional expenditure of fifteen dollars would probably have cured permanently. Here it would be well to consider the cost of the treatment. At the present wholesale price, a course of six injections of salvarsan cost fifteen dollars. The government collects at least twenty-five per cent. of this amount. In addition, the price of the drug was set at a time when it was thought that one or two treatments would cure, and the necessity of repeated injections has not reduced the cost of a single dose. In view of the great benefit to be derived from salvarsan, it seems wise for the medical profession to take some concerted action to reduce its cost. Both our government and the manufacturers should be approached with this end in view.

In regard to the relative efficiency of salvarsan and neosalvarsan, it has been shown, both in experimental syphilis and clinically in early syphilis, that for the same amount of money about twice the therapeutic effect can be obtained from salvarsan as from neosalvarsan.

The work of the social service could be more efficiently carried on if the treatment of syphilis were under one department. Upon first glance it might be thought that social service workers might not be needed in this branch of medicine. But similar methods might be used here as in other branches of the dispensary. The financial condition of the patients should be investigated, and those patients who are able should be compelled to pay for their treatments, while those who are unable should receive free treatment. The patients who fail to return could be followed up and encouraged to continue their treatment until a cure was effected. Social workers, specially trained and adapted to this kind of work would be needed, but the efficiency of the dispensary would be enormously increased by such assistants.

GENERAL ORGANIZATION OF CLINICS.

In the general organization of all the clinics the division of the city into various districts should be most seriously considered. Patients should not be treated in a dispensary outside of their own district. Exceptions to this rule might be made in university clinics, where as much material as possible is desirable for teaching purposes. The districting of the city would soon allow of a fair estimation of the amount of syphilis in a given district, and suitable provision for physicians and equipment could be made in each dispensary.

SUMMARY.

The dispensary handling of syphilis should be centralized, with representatives of each specialty as members of the staff. Every facility for exact and early diagnosis should be at hand, so that guesswork in diagnosis can be eliminated as much as possible. Centralization in treatment would result in economy and increased efficiency, and the social work with these patients could be more effectively carried out, especially the following up of negligent patients.

After all this part of the work is organized, the question of treatment will be only partially solved unless the wards of all the hospitals are opened to patients in all stages of syphilis. Severe early cases and many cases with nervous and visceral involvement should be under ward treatment for a certain period. Because of the chronic nature of the disease, the work between the ward and outpatient department should be closely correlated. The laboratory workers in the past ten years have furnished us with the weapons to successfully combat this disease. In this day of preventive medicine it is important that we, as clinicians, should see to it that there is every opportunity for the application of the measures at hand. The question of cost must be met squarely. The cure of syphilis is not cheap, but the failure to cure it is still more expensive. If our hospitals and asylums are ever to be relieved of the care of such preventable diseases as visceral syphilis, congenital syphilis, and so called parasyphilis, the dispensary facilities for the early treatment of the disease must be properly organized.

Rockefeller Institute Hospital.

DISPENSARY TREATMENT OF GONORRHEA.*

By Edward L. Keyes, Jr., M. D.,
New York.

The practical problem of providing adequate dispensary facilities for the treatment of persons suffering from gonorrhea in large cities presents as its chief economic difficulty the time when such clinics shall be held. Women patients may be treated at any time during the day, but the male gonorrheic is usually a wage earner whose capacity for work is but little interfered with during the major part of his disease. Consequently, he finds it extremely inconvenient to visit the clinic during working hours. Therefore the clinic for men to be truly efficient should be held in the evening—at 8 o'clock. It is true the city harbors a great number of night workers who would be debarred from evening clinics. Yet, inasmuch as it is always difficult to obtain assistants for the management of an efficient evening clinic, we need have no fear that the daytime clinic for venereal diseases will disappear.

A second problem which was mentioned in the discussion of this subject before the Society of Sanitary and Moral Prophylaxis, in February, 1907, is this, although the number of clinics for the treatment of venereal diseases in the city is inadequate, nevertheless, it is felt that multiplication of purely venereal clinics unattached to general dispensaries may repel patients who feel the odium of attending such a clinic. This problem, however, is largely theoretical, for a few years ago, and perhaps now, the largest clinic in town was devoted exclusively to venereal diseases and held in the evening at the Hudson Street Hospital. When I was associated with this clinic the patients seen in the evenings, twice a week, numbered from eighty to 100.

The clinic for gonorrhea must be divided into two entirely distinct parts: One for the women, the other for the men. Whether a special department shall be set aside for the treatment of children is open to question. Little girls can most conveniently be treated at the women's clinic, though some provision should be made for segregating them while waiting their turn. The immature boy gonorrheic is so rare a visitor at our clinics that it is difficult to make special provision for him. At present he is treated with the adult male gonorrheic.

Gonorrheal rheumatism and conjunctivitis require hospital care. Inasmuch as gonorrhea forms so large a part of clinic work in gynecology it would obviously be impossible to separate the two subjects, and, therefore, the clinic must combine treatment of all gynecological disorders with that of gonorrhea.

Special provision must, however, be made for separate sets of instruments for the treatment of gonorrheal and nongonorrheal cases. Even with this precaution the danger of infection cannot be entirely eliminated, for however stringent the rules may be as to the boiling of instruments, these instruments pass through many hands, the responsibility is inevitably divided, and, therefore, in view of the grave risk of gonorrheal infection by indirect contagion, it is wiser not only to have separate instruments, but also a separate room for the treatment of noninfectious cases. The uncertainty of diagnosis forbids precise segregation, yet the mere fact of placing gonorrheal cases in one room to be treated by one set of instruments, and noninfectious ones in another, will serve as a constant reminder to the members of the staff of the ever present danger.

In the men's clinic, which may be frankly labeled "Genitourinary Clinic" or "Clinic for the Treatment of Male Urinary Diseases," the danger of infection is apparently not so great, while the number of postoperative and other nongonorrheal cases requiring the passage of instruments is small. Hence segregation of patients is probably neither required nor practicable, though obviously the most stringent asepsis is required.

A small clinic with one or two assistants presents no difficulty for the supervision of patients, as this may be made by the chief physician in attendance. But if the clinic is a large one the chief may find it convenient to spend the greater part of his time in carefully examining each new patient in conjunction with the physician to whom it is assigned. Under such circumstances the chief surgeon should note the condition of each returning patient at least every ten days or two weeks, so that he may be personally responsible for the action of his assistants. It is preferable that the clinic be open every day excepting Sunday. Yet it is usually convenient to divide the physicians into two groups, each visiting on alternate days. Indeed, some clinics do efficient work, although seeing their patients but twice a week.

So long as the attendance of patients at the clinic is limited to ten or fifteen patients, almost any organization or lack of organization will suffice to serve them. But if a larger attendance is expected or desired, certain special provisions must be made for the sake of efficiency.

Attendants. The gynecological clinic requires at least one trained nurse for every two physicians in attendance. These nurses see to the sterilization of instruments, the distribution of history cards, the inscription upon these cards of such data as age, name, address, occupation, etc., the distribution of patients to the physicians who are to attend them, and also assist in the actual examination and treatment. One nurse to each physician is obviously none too many to perform efficiently these manifold duties, if she can be had.

The male clinic requires at least one attendant for duties similar to those performed in the gynecological clinic by the trained nurses.

Ground plan and equipment. The clinic should be composed of at least three rooms, viz., waiting room, treatment room, and operating or cystoscopic room. If possible, there should be a separate sterilizing room or alcove, and a laboratory for microscopical and chemical analyses.

In the interests of decency it is proper, in the male as well as in the female clinic, that the treatment room be divided into a number of curtained alcoves, each containing an examining table, chair, and instrument table, leaving the remainder of the room in the form of a corridor running by these alcoves. At least one alcove should be provided for each physician in attendance, and much time can be saved by having extra alcoves to which the physi-

*Read at a stated meeting of the New York Academy of Medicine, February 20, 1913.

cian can pass for the treatment of one patient while the patient in the adjoining alcove is dressing or undressing.

In large clinics it will be found convenient to use the central alcove as a sterilizing and laboratory chamber.

The rooms should be so arranged that the patients enter from the waiting room into one end of the treatment room, where they receive their cards and pass thence to the treatment or cystoscopic rooms, leaving their cards with the physician after their treatment, and passing out by a door at the far end of the corridor in the treatment room.

The precise instrumental equipment of the clinic depends upon the taste and experience of the physician in charge as well as the generosity of the institution supporting the clinic. The distribution of a special alcove and special patients to special physicians would doubtless improve their work. The distribution of special instruments still further stimulates them to efficient service. Each clinic should possess a microscope and the equipment for rapid staining and examining of discharges for pus and gonococci. This method of diagnosis will be employed in each acute case, while in chronic cases the clinic will depend for its diagnosis chiefly upon the complement deviation test, which must be performed by the board of health or some other properly equipped laboratory.

Finally, the social and hygienic side of the venereal problem must be constantly borne in mind. The cases must be reported to the board of health, as required by law, and the individual patient should have impressed upon him the precaution required by his social circumstances, especially the danger of infection to his own eyes, and those about him, whether by sexual intercourse or by direct or indirect contact with the pus from the urethral discharge. The best way to impress these general precautions upon any patient is to distribute leaflets emphasizing them. These leaflets should be printed, not only in English, but also in the other languages chiefly employed by the patients who visit the clinic. The following form is a good sample for men. It was compiled by the late Dr. Follen Cabot.

Gonorrhea, or "clap," is a local contagious disease which requires treatment until the physician pronounces you cured.

To avoid infecting others and to prevent complications, as bubo, stricture, swollen testicles, etc., the following rules should be observed:

1. During the first few weeks walking should be limited. When the discharge is profuse you should keep off your feet as much as possible.
2. Do not use alcohol in any form, as it always prolongs the disease. Drink milk, tea, and from six to eight glasses of water during the day.
3. Avoid all sexual relations until you have been pronounced cured by your physician, as the disease may be given to a woman even after the discharge has apparently ceased. When it is present you should avoid sexual excitement, as erections always aggravate the disease.
4. Always wash the hands after handling the parts. The discharge, if carried to the eyes, will cause blindness.
5. Sleep alone, and be sure that no one uses any of your toilet articles, particularly towels and wash cloths.
6. Never lend your syringe to any one, and as soon as you are well destroy it.
7. Be sure that the bowels move every day. If they are inclined to be constipated, take a dose of Rochelle salts before breakfast.
8. Do not use ginger ale, mustard or pepper, horseradish, or stimulating sauces on your food.

109 EAST THIRTY-FOURTH STREET.

HOSPITAL ACCOMMODATIONS FOR THE TREATMENT OF VENEREAL DISEASES.*

BY S. S. GOLDWATER, M. D.,
New York.

Hospital accommodations in the city of New York for patients suffering from venereal diseases are conspicuously wanting. A careful investigation made five years ago showed that there were then available approximately 150 designated beds for cases of venereal diseases in male patients, and about fifty beds for female patients. At that time there were only five hospitals in the city that officially accepted the treatment of venereal diseases as part of their function. Although there has since been a slight increase in the number of hospitals engaged in this work and in the number of beds devoted to it, the general situation is not materially different from what was revealed by the investigation of 1908. There must be reasons for this alarming neglect of an important hospital duty in a city which is so obviously determined to keep abreast of the times in its public health activities. What are these reasons?

An important factor is the failure of hospital physicians and of hospital trustees to formulate a theory of hospital administration as a whole. In planning a hospital, or in formulating a scheme for hospital organization, it has not hitherto been the custom to ask, What properly constitutes a hospital? How should the clinical organization of a hospital be composed? What groups of cases, what clinical departments, should be recognized, in order to insure the greatest efficiency in the treatment of disease in order to provide for indispensable cooperative effort in the handling of complicated cases? To work out a theory of hospital organization and then to bring into being, at once or by gradual or successive steps, an institution to correspond to the accepted theory, would be to organize a hospital on rational lines. If hospitals were planned in this way, no phase of clinical medicine could or would be neglected. It would be found very speedily that complicated cases are not exceptional in hospital practice, and that the care of such cases implies the cooperation of a group of clinicians of varied training and capacities. The wide dissemination of venereal diseases, in their various phases, would soon be brought to light, and general hospitals would proceed to provide departments for the treatment of syphilis and gonorrhea, precisely as they would establish departments equipped to deal with every special branch of medical and surgical work. The many distinctive problems in clinical medicine would be recognized, and the interrelations of the various branches of medicine provided for.

Considerations of a slightly different sort would also forbid the neglect of venereal diseases in hos-

*Some informal remarks (abridged) made at a stated meeting of the New York Academy of Medicine, February 20, 1913.

pital work, if all the facts were generally known. When a hospital turns away a patient suffering from syphilis or gonorrhea in the early stages of either disease, certain economic consequences cannot be escaped. The temporary neglect of these diseases carries with it a penalty, not only for the patient and for society at large, but for the hospitals themselves. Hospitals which turn these cases away from their doors, heedless of the consequences, bring upon themselves the necessity of caring for these same patients in the later, more lasting, more hopeless, and more expensive stages of disease.

Prejudice against the diseases in question and also against the victims of these diseases, has been another potent factor in determining hospital policy in the past. However much the moral status of patients may vary, from the standpoint of the hospital all sufferers from "social" diseases are objectionable persons. The innocent woman and child are thus condemned to neglect along with the libertine. In the early stages of the disease, when its more serious consequences are still avoidable, the hospital declines to act; but later, when complications have arisen which threaten life, when irremediable harm has been done, the patient is welcomed to the hospital, partly because of the urgency of the symptoms and partly because the disease is now given another name. At a recent conference, a hospital trustee declared that no case of syphilis or gonorrhea was ever admitted to the hospital which he represented. A former house officer of the hospital, who was also present, replied that fully one fourth of all the patients treated in the hospital in question presented evidence of syphilis or gonorrhea in some form.

Too much emphasis has been placed upon the danger which is supposed to be encountered by hospital workers in the treatment of those afflicted with venereal disease. The danger of infection in hospitals is comparatively slight, and is least of all present in hospital wards which are specifically set aside for the treatment of known communicable conditions. In wards specially designated for this class of treatment, the sources of danger are not likely to be overlooked. When these sources are once recognized, suitable precautions are readily taken.

Hospital authorities are apt to think that their duty is done when these patients are referred to dispensaries. They assume that the dispensary treatment which is available to-day is efficient treatment, and that if the patient declines to go to the outdoor clinic when he is so advised, and consequently fails to get well, the fault is his own. The difficulties attending the treatment of these diseases in dispensaries are many. The continued attendance of patients cannot readily be enforced; the equipment of outdoor clinics is often inadequate; the hours at which treatment is offered are often inconvenient to the wage worker and act as a deterrent. If the facts in regard to dispensary work in this field were better known, two things would happen: First, the equipment of outdoor clinics for the treatment of venereal diseases would be improved; and, second, hospitals would be less likely to feel that their duty was done when a patient was brusquely turned away from the hospital door and advised to seek dispensary treatment.

It is gratifying to learn from Doctor Biggs that the hospital for the treatment of venereal diseases which the health department is about to establish will limit itself to the care of patients who obviously constitute a menace to their environment, and who cannot find elsewhere the care which they need. If it is to be the continued policy of the health department simply to fill such gaps as may be left in the field of medical relief by the voluntary and general municipal hospitals in the city, no strong objection can be made. If, however, the health department should propose, now or in the future, to undertake the treatment of syphilis generally, this could be done only in the face of a strong protest from the medical profession; if persisted in, such a policy would necessarily cause a great drain upon the city treasury, and would tend rapidly to impoverish the taxpayer. Besides, on general principles, it is a mistake to establish more hospitals, with facilities limited to the treatment of certain diseases or certain regions of the human body. The rate of hospital progress in the future will be proportionate to the acceptance of the theory of the superiority of the general hospital, with its group of coordinated departments. The Academy of Medicine and the medical profession at large should use their influence to spread this gospel of perfection, and thus to prevent as far as possible the multiplication of special hospitals, for only by yielding up their individual and separate existence can the latter overcome the handicap which tends to minimize their efficiency. In my opinion, a special hospital is an unsafe place for a patient because of its imperfect or incomplete equipment, and because of the limited professional outlook and capacity of its specialized staff. In such a hospital all possible emergencies and many common complications cannot effectually be dealt with, while in a general hospital consultants representing all branches of medicine and surgery are in daily attendance, and their combined skill and knowledge, supported by a proper equipment, can be brought to bear whenever needed.

It would be a mistake for the health department to proceed too rapidly in providing facilities for the treatment of venereal diseases or even for their diagnosis. It is true that voluntary hospitals have hitherto neglected this work, that they have failed to do what was plainly indicated as necessary; but public sentiment has been aroused, and the active campaign of education which has been going forward during the past few years has brought about a gradual change of sentiment on the part of the public, which has already reacted, and which is bound to react more and more, upon hospital policy. Old prejudices are being swept away; new conceptions of hospital administration are taking hold; on all sides there is a demand for efficiency in medical work, and the neglect of progressive and dangerous diseases during their earlier stages will no longer be tolerated. It is predictable that in the course of the next few years voluntary hospitals will do everything possible to render unnecessary any large participation in ordinary hospital work by the Department of Health.

I am not at all sure that the system of notification

of venereal diseases which the health department is attempting to establish, and the legality of which has been questioned, represents a wise policy. If the names of patients who are treated in institutions must be reported to the department, while the names of those privately treated are not so reported, patients will naturally avoid hospitals and dispensaries, and will seek such private care as they may be able to afford. And if later the health department should require from private physicians the same form of notification which they are now demanding from hospitals and dispensaries, a strong incentive will thus be furnished to patients to undertake self treatment, while those who are not bold enough to attempt this are sure to select practitioners of an unscrupulous type, who have no sense of loyalty to the community and no respect for the sanitary code. That many patients will thus be driven into the arms of advertising quacks is inevitable. Unscrupulous individuals will seize the opportunity to thrive upon the desire of patients to avoid publicity. Such an outcome is not what the Department of Health is seeking. It should be the policy of the health department, therefore, to encourage the poorer classes to seek treatment in free hospitals and dispensaries; but I fear that no argument, no persuasion will suffice to popularize dispensary treatment if as an immediate result of registration at a public clinic there is to follow a branding of the patient as infamous.

The Associated Outpatient Clinics has undertaken to improve dispensary facilities for the treatment of venereal diseases. The Academy of Medicine has expressed its interest in the subject. The Department of Health should now stand aside for a period, and see how far the organized effort of hospital and dispensary managers will go toward providing for the treatment of venereal cases on a comprehensive and satisfactory scale.

Mount Sinai Hospital.

THE RELATIONSHIP OF SYPHILIS TO INTERNAL MEDICINE.*

By Warfield T. Longcope, M. D.,
New York.

The relationship of syphilis to internal medicine is a subject almost without bounds, and it is therefore necessary to restrict what I have to say to a limited field, and, indeed, do little more than touch upon a few important topics. The great importance which syphilis bears to the etiology of many well defined chronic diseases that incapacitate our population in the prime or a little after the prime of life is rapidly becoming evident. Indeed, as we investigate this one disease—syphilis—its effects become little less than appalling. On the general hospitals falls the burden of the care of most of these penniless, chronic sufferers, and during the entire year the majority of the ward patients belong to this group. The acute infections come spasmodically, but, like the poor, the chronic diseases are always with us. Principally by means of the Wassermann reaction we are rapidly discovering which of these chronic diseases are directly dependent upon syphilis, and let me call your attention for a moment to some of these.

The two situations in which *Spirochæta pallida* seems most often to persist and where it causes most trouble, late in the disease, are the cardiovascular system and the nervous system. The whole group of nervous diseases dependent upon syphilis, I should like to discuss later and at some length. But first let us see how frequent is cardiovascular syphilis and syphilis of some of the other systems which come directly under the observation of the clinician.

Of the cardiovascular diseases dependent upon syphilis, syphilitic aortitis stands out most prominently. This manifestation, which usually produces symptoms some ten or twenty years after the primary infection, forms the basis of three very serious conditions, namely, aneurysm, aortic insufficiency, and angina pectoris. It can now be shown definitely that syphilitic aortitis is the direct cause of from ninety to ninety-five per cent. of all aneurysms of the arch of the aorta, so that for practical purposes aneurysm of the arch means syphilis. The same disease is responsible for about seventy-five per cent. of the cases of aortic insufficiency in adults, and anywhere from thirty to fifty per cent. of the cases of angina pectoris in young adults. Aneurysm and aortic insufficiency are common diseases, and though angina pectoris is less often seen, it is still by no means rare. To the involvement of the coronary arteries by syphilitic aortitis, we must ascribe, as well, a certain proportion of cases of myocarditis, and it has been estimated that excluding aneurysm and aortic insufficiency, about twenty-four per cent. of patients suffering from cardiovascular diseases give a positive Wassermann reaction. With generalized arteriosclerosis, however, the conditions are different, and in only a small proportion of cases, about twelve per cent., is a Wassermann reaction obtained. If, therefore, we are to prevent the development of the severe cardiovascular affections, that as you know deal a fatal blow to so large a proportion of our population, we must direct our attention to two diseases of perhaps equal importance, syphilis and rheumatic fever. Were we to eradicate these two infections, chronic disease of the heart and aorta would, for the time of superannuation, be a rarity.

Of the general diseases next in importance, we must perhaps mention the bone and joint manifestations of syphilis. It can now be shown that many of the cases of chronic arthritis, osteitis, and periostitis are directly due to syphilis. A certain proportion of cases of cirrhosis of the liver, too, are caused by *Spirochæta pallida*, but it is difficult to obtain any convincing statistics on this subject. Along with cirrhosis of the liver, we must mention the fact that positive Wassermann reactions have been obtained in cases of splenic anemia or Banti's disease, and in some instances these conditions seem to be dependent upon congenital syphilis.

Recently the importance of syphilis as the basis of certain cases of neurasthenia has been forcibly

*Read at a stated meeting of the New York Academy of Medicine, February 20, 1913.

impressed upon me. Nonne and the French have always insisted upon this point, and I have recently seen at least two patients in whom the underlying cause for general ill health and severe neurasthenic symptoms seemed to lie in a chronic syphilitic infection (totally unsuspected), which lurked probably in the aorta.

The list of diseases which until this time have had rather an obscure etiology, is quite a long one. I have time only to mention such conditions as paroxysmal hemoglobinuria, a disease which, according to recent reports, is almost constantly accompanied by a positive Wassermann reaction, and the appalling number of eye diseases which are dependent upon syphilis. According to Leber, excluding suppurative cases, the Wassermann reaction is positive in twenty-six per cent. of cases of retinitis, thirty-eight per cent. of iritis, and eighty-four per cent. of keratitis.

What now does this mean to the general hospital and indeed to the general public? It means that at the Presbyterian Hospital at times as many as one fourth of the patients in the medical wards give positive Wassermann reactions. Most authorities are now agreed that a positive Wassermann reaction in a syphilitic means potentially active syphilis, though the infection may to our eyes be latent. And, indeed, most of these patients are suffering from some chronic syphilitic affection. The statistics vary from time to time, but it may safely be said that the number of cases which give positive Wassermann reactions in the medical wards of the hospital, and I believe it equally true of all general hospitals in this city, as well as elsewhere, varies between twenty and thirty per cent. The bulk of these consist of cardiovascular, joint, and bone syphilis, or early syphilis of the nervous system, with occasional cases of late congenital syphilis. Many of these without the aid of the Wassermann reaction would not have been recognized as due to syphilis, and a few are being treated for conditions which are patently not syphilis; but not infrequently a positive Wassermann reaction has prompted a more careful special examination, and a lumbar puncture, eye ground examination, or radiogram, has revealed syphilis of the central nervous system, a chorioiditis, or irregular dilatation of the aortic arch. All of this means in cold figures that it costs the hospital, at perhaps a low estimate, about $25,000 a year to care for these individuals.

But the conditions in regard to the disease of the nervous system are perhaps even worse. Through the numerous investigations which have now been made upon the blood and spinal fluid in cases of paresis and tabes dorsalis, we know that for practical purposes both of these diseases are due to syphilis. Noguchi, by his beautiful demonstration of *Spirochæta pallida* in brains from cases of paresis, has now set beyond a doubt the fact that paresis is not a parasyphilitic affair connected in some indefinite way with syphilis, but that paresis is syphilis itself.

Through the kindness of Doctor May and Doctor Hoch, I have obtained some statistics from the State hospitals for the year 1911. From these we learn that 13.3 per cent. of all cases admitted to the State institutions were cases of general paresis, and during the year 1911 there were 758 cases. The total number of patients treated at the State hospitals September 30, 1912, was 31,624. I have myself made some rough calculations, and if we assume that thirteen per cent. of the patients were paretic, it is evident that on this day there were about 4,000 cases of paresis in these hospitals. The care of these patients probably costs the State almost a million dollars a year.

Swift calculated that, during the year 1910, there were admitted to all hospitals throughout the State from the island of Manhattan alone 822 cases of paresis and from the entire State of New York about 1,500 paretics.

In the State of Massachusetts, Cunningham has recently estimated that the care of cases of tabes and other syphilitic nervous diseases in the various insane hospitals costs about $300,000 a year. In Philadelphia at the City Hospital the cases of paresis, tabes, and cerebrospinal syphilis admitted to the neurological wards alone, form fifteen per cent. of the admissions, but further data than this I could not obtain accurately. This does not include cases admitted to the psychiatric wards.

Thus it can be seen what a tremendous economic problem this matter becomes, to say nothing of its humanitarian aspect, and we may safely say that the two most important and widespread diseases with which we have to deal are tuberculosis and syphilis. One hesitates indeed which to mention first.

The pathetic part about these cases of tertiary syphilis is that treatment is of such little avail. In a few cases the disease may be arrested and even the symptoms cured, but too often the damage has already been done, and though the life of the individual is spared over a few years, he remains an invalid, hampered by a leaking heart valve, a partial paralysis, or a stiff joint. In many cases the therapeutic outlook is even less favorable, and finally in the paretic absolutely hopeless. If only these patients could be seen, a correct diagnosis made, and proper treatment given at the beginning of the disease! Then the cure is possible and all this needless expense and suffering could be prevented. The fight against tuberculosis has been carried out with energy and with most creditable sympathy and aid of the public. The fight against syphilis is perhaps just starting in earnest, and as compared with the difficulties which arise in the control of tuberculosis, syphilis should be a comparatively easy matter to attack. Cooperation of physicians, hospitals, the public health department, and the public seems to be almost the only means to reduce the incidence and unsuspected ravages of this ubiquitous disease.

680 Madison Avenue.

HYPERTROPHY OF THE PROSTATE.*

A Discussion of the Treatment.

By John H. Gleason, M. D.,
Manchester, N. H.,
Surgeon, Beacon Hill Hospital.

Complete extirpation of the enlarged prostate is the procedure recognized as necessary for the re-

*Read at a meeting of the Belknap County Medical Society, Laconia, N. H., February 10, 1913.

lief of the progressive and distressing symptoms of prostatic hypertrophy.

The prostate gland is approached in two ways, suprapubically and through the perineum. The writer advanced the theory in a paper published November 16, 1907 (1), that the route of the operation should invariably and always be one of choice, such choice being influenced mainly by the condition of the patient, the site and type of the tumor, and the safety of the procedure.

This plea for a selective operation I would make again, as I firmly believe that the best functional results and lowest mortality are to be obtained only through adherence to this plan. Until within the last few years the perineal operation for the removal of the hypertrophied prostate was the operation of choice in this country. We maintained that the period of convalescence was shorter, that the wound healed quickly with less danger of infection, and that the mortality was lower. Recently, however, the technic of the suprapubic operation has been so much improved, chiefly through the work of Mr. Freyer, who does an ideal, so called complete prostatectomy, that one must regard this as the operation to select in all cases if conditions warrant. I would, therefore, reserve the perineal operation for those patients who have hard fibrous prostates presenting low down in the rectum. The anatomy and surgical pathology of the prostate will be briefly alluded to in such a manner as would bear on the selection of the route and on the methods to be adopted in the proposed operative treatment.

It has recently been discovered that the traditional anatomical and pathological nomenclature as applied to prostatic hypertrophy is in need of revision. Tandler and Zuckerkandl (2) held that our accepted division of the prostate into two lateral and one median lobe does not correspond with the facts. They say that the anatomical capsule of this gland is derived from, and is intimately connected with the endings of the pelvic fascia that meet around the gland. They further state that it is impossible to enucleate the prostate out of this capsule, that it can only be dissected out, and that the term surgical capsule is misleading. They agree with the statement of von Frisch (3), that the prostatic capsule of the surgeons consists of compressed prostatic tissue, and are convinced that the hypertrophy of the prostate takes place exclusively in the part of the gland which extends from the internal urethral orifice into the openings of the ductus deferentes, and that this hypertrophy includes only the central nucleus of the gland.

The enucleation, therefore, of the hypertrophied part of the prostate occurs inside of a circular layer of compressed prostatic tissue, detached from the central part of the gland. This part of the gland is interwoven with the proximal end of the urethra which will always be removed in the suprapubic operation, together with the enucleated part of the prostate. If the operator is fortunate, the urethra will be severed proximally from the section of the urethra that carries the colliculus seminalis with the openings of the ductus deferentes. The nature of the so called surgical capsule will explain the surgical experience that the larger the prostatic tumor, the easier will be its enucleation. This is so for the reason that the extensive growth of the hypertrophied nucleus leads to excessive compression and complete separation of the peripheral glandular tissue.

There are often cases where there is difficulty in finding cleavage and smooth enucleation. In such instances the differentiation between the peripheral prostatic tissue and the central hypertrophied prostatic tissue is not complete. One then encounters dense strands, consisting of lobular septa and of rests of glandular tissue. In rare cases, where separation has not taken place at all, enucleation is out of the question, and the tumor has to be dissected out of the surrounding tissue. Wilson and McGrath (4), of the Mayo clinic, report a study of 468 prostatectomies. Of this series 387 cases (eighty-three per cent.) were of hypertrophy, the remaining cases being of tuberculosis or neoplasms. They report the ages of the patients whose prostates showed hypertrophy only, as follows:

50 to 60 years of age	65	(17 per cent.)
60 to 70 years of age	194	(50 per cent.)
70 to 80 years of age	116	(30 per cent.)
80 to 90 years of age	12	(3 per cent.)

It will be noted that all the patients may be assumed to have passed the most active period of sexual life.

In regard to the etiology of prostatic hypertrophy, Wilson and McGrath (4) discuss it under the following headings:

1. Is the disease an inherited or family tendency?
2. Is it a normal phenomenon of senility?
3. Is the disease analogous to the formation of fibroid tumors of the uterus?
4. Is the disease referable to errors of alimentation, as overfeeding, alcoholism, constipation, etc.?
5. Is prostatic enlargement the result of hyperemic processes brought about by overstimulation during sexual life?
6. Does prostatic hypertrophy result from acute and chronic prostatitis, gonorrhea, vesicular calculi, etc.?
7. Is prostatic hypertrophy an end result of general febrile disease, for example tuberculosis, rheumatism, gout, etc.?
8. Is it due to arteriosclerosis?
9. Is it a compensatory process in order to effect hypertrophy of the muscles of the bladder?
10. Is the process of prostatic hypertrophy neoplastic?
11. Is the hyperthrophy due to the absence, in declining sexual life, of some internal secretion from the testicles which normally inhibits the growth of the prostate?
12. Is the process a compensatory provision to supply a stimulus to a testicle with declining function?
13. Is the hypertrophy caused by urethral stricture?

One finds in looking over the literature regarding the etiology of this disease many able writers who advance and defend some of the foregoing theories. Also one finds equally able exponents of the fallacies of the theories in question. Coincidences often must be the foundation for such arguments. In view of these diversified claims of the authors as to the causation of the disease, one must agree with

Wilson and McGrath (4), in the statement that "no hypothesis has yet been advanced adequately harmonizing the facts." Freyer (5) has recently reported one thousand cases of total enucleation of the prostate, and as a result of a study of these cases he states as follows:

I have analyzed innumerable cases and devoted much time and thought to this subject, but I have to confess that I have still no insight into the origin of this disease; and my researches would indicate that all theories hitherto advanced on this subject have no foundation in fact. My experience would seem to show that the previous mode of life led by the patient has nothing to do with the advent of this disease. It occurs with uniform frequency in persons who have suffered from urethritis and those who have not; in the married and unmarried; in the continent and those who have indulged in sexual excess; in persons of sedentary equally with those of active habits; in the gourmand and in the man who has eaten sparingly all his life. Even the purpose of the normal prostate in the human economy, always a subject of speculation, has been rendered more speculative still by the results of this operation. It is widely held that the prostate is some kind of an accessory sexual organ. But there is no diminution of the sexual capacity after enucleation of the enlarged organ suprapubically, the nerves controlling this function being left intact, though when removed perineally sexual desire would appear to be destroyed.

In regard to the question of anatomical regeneration following the operation of prostatectomy, and as an illustration of the late postoperative anatomical changes, Tandler and Zuckerkandl (2) describe the regenerative process noted at autopsy two years after prostatectomy. In this instance the cause of death was arteriosclerosis. Following the operation the patient had completely normal function of the bladder. On sagittal section the small, thick walled bladder is seen descending almost vertically as a narrow tube, and after a course of about two cm. it bends quite sharply forward upon itself and presents a small dilatation. The tube connecting this widened area with the vesical cavity is not urethra, but transformed bladder. Nowhere is a stricture of the urinary canal noted. The contraction of the circular muscular fibres of the bladder, especially the sphincter portion, has narrowed the lower part of the organ, thereby forming a canal. Of especial interest is the fact that the patient did not suffer from disturbance of the bladder function. Consequently, though at least a part of the bladder was transformed functionally into urethra, continence remained.

Thus, in the restitution of the normal function, the inferior part of the bladder, together with the sphincter, forms the urethra. Tandler and Zuckerkandl further conclude from their observations in their series of cases that the hypertrophy affects without exception the portion of the prostate which is turned toward the bladder. Basing their opinions, therefore, upon anatomical grounds, they state that aside from considerations of technic, prostatectomy performed through the vesical route is the method of choice. They further say: "As a principle, we would like to insist here that on surgical grounds we can hold only that method as justified in which the operation is performed under the guidance of the eye. The anatomical knowledge gives us the right to reject those methods by which the operator in some manner removes the prostate from its position with obscured finger."

In regard to malignancy in the prostate, Wilson and McGrath (4) state it is observed from earliest childhood until late old age. The ages of the patients with carcinoma tabulated by them are as follows:

1 was between 40 and 50 years of age.
9 (12 per cent.) were between 50 and 60 years of age.
29 (40 per cent.) were between 60 and 70 years of age.
30 (41 per cent.) were between 70 and 80 years of age.

Carcinoma may be present in the gland both primarily and secondarily. Carcinoma of the prostate occurs most frequently as the medullary or adenoid type. Young and Geraghty's (6) description of the macroscopic appearance of prostatic cancer is as follows:

It is ordinarily hard, tense, and on pressure gives very little sense of elasticity which is generally not lost even in well advanced fibroid prostatitis. On cutting into the section it imparts a gritty sensation to the knife blade, which is absent in the lobulation so characteristic of hypertrophy. Occasionally, where the cancer has invaded a growth previously adenoid, a carcinoma may persist in this tissue, but it is seldom confusing. The finer details of the cut surface vary somewhat; irregularly interlacing bands of varying size are seen, with small, grayish yellow, isolated masses scattered here and there. The interlacing bands are fibrous in character, and the yellowish areas accumulations of cancer cells. This appearance is not present in fibroid prostatitis, in which the epithelial element frequently disappears and in which the surface is much more smooth and homogeneous than in cancer. Where cancer is infiltrating in character, fine yellowish lines can frequently be seen by the aid of a small magnifying lens. Usually one can be moderately certain of the cancerous nature of the tissue upon gross inspection alone. When the operator's knife, in making the capsular incision, cuts through tense tissue which does not bulge, the edges of which are firm and rigid, suspicion should be at once aroused.

These relatively small hard fibrous prostates are tumors very difficult to remove, especially by the suprapubic route. Cancer and hypertrophy are often observed together and usually present great difficulties in removal. Freyer (5) does not remove the malignant prostate unless the disease is confined within the so called true capsule of the prostate, that is, if it has not spread into the sheath or anatomical capsule. If the hard, apparently malignant prostate is movable in the surrounding tissues, he removes it, but if it is fixed he makes no attempt to do so.

CONDITIONS REQUIRING A PROSTATECTOMY.

In determining whether or not to operate for enlargement of the prostate, we must consider the symptoms depending on the enlargement from which the patient is suffering. These symptoms, according to Freyer (7), are as follows:

1. There may be from three to fifteen ounces of residual urine and the patient not using a catheter.
2. Extreme overdistention and dribbling.
3. Retention from time to time.
4. Ability to void some urine, although the patient is obliged to employ a catheter to obtain rest and comfort.
5. Entire dependence on the catheter.
6. Complete retention.

Judd (8) states: "As a rule, it is not advisable to operate if there are only from two to three ounces of residual urine and only slight symptoms. This condition may exist for years without becoming worse." One should operate, however, as soon as recurring retention or beginning infection shows that the period of toleration is past and not wait for those threatening symptoms which add so greatly to the mortality. Also, if malignant tumors of the pro-

state are removed early, some cures are to be expected. The late operations for malignancy are not apparently worth the patient's while.

CONDITION OF A PATIENT SUFFERING FROM PROSTATISM.

The primary symptoms are frequency of micturition, the act gradually becoming more difficult and prolonged. The stream starts slowly and sometimes dribbles. This condition is followed by a sense of fullness, burning, pain, and distress. These symptoms gradually become more and more pronounced, and partial or absolute retention may or may not intervene.

The secondary symptoms are insomnia, loss of appetite, strength, and weight. According to Judd (8), "these secondary symptoms may be caused by damming back in the ureters and pressure in the kidneys; or they may be caused by intoxication from the presence of residual urine. These symptoms are identically the same, and are probably caused by the same factors which produce symptoms in patients having insufficient kidney elimination." Judd further states that "it is very important to determine whether the patient is suffering from renal insufficiency alone, or whether he is suffering from autointoxication resulting from absorption and interference with kidney function, which interference is caused primarily by mechanical obstruction of the enlarged prostate."

Few patients suffering from prostatism are free from one or more grave complications, such as cystitis, vesical calculus, nephritis, pyelitis, diabetes, chronic bronchitis, cardiac disease, hernia, hemorrhoids, paralysis, etc. However, even in some of the most complicated cases, where atony or contraction of the bladder is more or less extreme and where there is marked secondary involvement, a successful prostatectomy will bring relief, the kidneys will be benefited, and the bladder will nearly always regain its function. It further stands to reason that one should urge an early operation and not defer the procedure until secondary changes have taken place, for a prostatectomy performed before sepsis is present is of slight gravity compared with one performed in an emergency or as a last resort.

ANTEOPERATIVE TREATMENT.

The preliminary treatment is of most importance. It should begin as soon as a careful examination has been made. The skin, kidneys, and bowels must be attended to. If possible, the bladder should be cystoscoped. Changes in the urine should be combated vigorously. In the more severe septic cases perineal or suprapubic drainage should be established as a preliminary measure in the treatment. That is, the prostatectomy is divided into two stages, one of drainage and preparation, and one of enucleation. With a permanent catheter in the bladder, the patient is placed in the same condition, so far as emptying the bladder is concerned, as he will be after the prostate is removed. By relieving the secondary symptoms first, the patient will be enabled to eat, drink, sleep, and improve in condition. He should be encouraged to take large quantities of water for several days in order to fill the circulation and to stimulate the kidneys into marked activity. During this period the specific gravity will change from 1.020 or more to 1.010 or less within a few days. One should not operate until this reaction has taken place and the specific gravity has risen. This preparation may take one or more weeks.

CHOICE OF OPERATION.

In a study of the details of the suprapubic and perineal operations, and taking into consideration the tissues involved in the dissection, and the immediate and ultimate results to be obtained, one at once concludes that there are many points of advantage as well as some disadvantages in either procedure. It seems to me that one should deliberately weigh the evidence presented, and, keeping in mind the element of safety, choose the operation that will promise the most favorable result in the individual case.

Reasoning in this way, one would say therefore that the operator should be as familiar with both the infrapubic and suprapubic methods of prostatectomy as with any other two methods of operating for one condition, and make his selection of route accordingly. The relative value of the statistics of the results of operators practising one method or the other exclusively should have no bearing or weight in the selection of the method of procedure. One must take for granted, that although this operation is comparable to none other in surgery owing to the advanced age to which it is mainly confined, yet if the cases are in the least selected, the mortality must be very small in the hands of an experienced operator. Hence a summary of cases from one clinic showing a slightly less mortality than that of another is of little practical value because of inequalities in potentiality in individuals.

The statistics of the operations done under favorable condition are invariably good. Freyer (5), in his 1,000 cases, reports fifty-five deaths or 5.5 per cent. mortality. The cause of death in twenty-four of these cases was uremia due to chronic nephritis. Freyer did not select his cases. Had he done so, to use his own words, "selection would have condemned a large proportion of them (1,000 cases) to a painful death after prolonged suffering, instead of the complete restoration to health that ensued in each case of recovery after operation."

In view of our present knowledge of the anatomy and pathology of the prostate the suprapubic method, as already stated, should be the operation to select unless there are strong contraindications. This operation has the marked advantage also of providing absolute control from the time the urine is first voided through the urethra. It enables one also thoroughly to explore the bladder. The suprapubic sinus usually requires a longer time to heal. The operation, however, is less likely to be attended with painful complications such as inflammation in the epididymis or testicle or wounding of the rectum.

The perineal operation should be reserved for those cases presenting hard fibrous prostates. If the firm or nodular gland is situated well down toward the perineum, and if one can reach the upper border of the prostate with a finger in the rectum, then, if the condition is uncomplicated by the presence of stone, the infrapubic route should be selected. In fibrous or malignant cases, where the gland must be removed by dissection accompanied

by considerable force, this method is far safer, owing to better drainage and to one's ability absolutely to control hemorrhage with ample packing.

TECHNIC OF THE PERINEAL OPERATION.

The method of Young (9) has been my operation of choice for the perineal route for some little time. The patient is placed in the exaggerated lithotomy position, and a wide curved or inverted V incision is made and carried down to the prostatic capsule. The membranous urethra is incised longitudinally, and through this opening Young's tractor is introduced and passed into the bladder. The blades of the instruments are then opened and gradual traction is made upon the gland. The prostate is further exposed by blunt dissection, and lateral incisions are made through the capsule at either side of the median line outside the ejaculatory ducts. The tumor is freed from its bed by dissection with the finger or blunt instrument, the gland being held and guided by the metal tractor.

The complete dissection and enucleation of the gland is further aided by Young's forceps, which very materially aid delivery. When the tumor has been removed the wound should be irrigated, and a large drainage tube introduced into, and retained in the bladder, the wound partially sutured and packed with gauze. The tube is removed in from three to five days, and the patient is allowed to sit up as soon as possible. If the operation has not been complicated by too forceful dissection, the bladder function is restored early and the wound is usually completely healed in from three to five weeks.

TECHNIC OF THE SUPRAPUBIC OPERATION.

The operation of Mr. Freyer is the most complete in detail and the one to be adopted. A description of his operation in abstract is as follows: The bladder is washed and then distended with boric acid solution or sterile water. A vertical incision, from two to three inches long, is made. The recti muscles are separated or cut. The bladder is still further distended by an assistant and made tense as a drum. The prevesical tissues are scraped or pushed up out of the way for two inches above the pubes. The peritoneum is not seen. The knife is then plunged into the bladder and the bladder incision is enlarged sufficiently to allow its cavity to be explored thoroughly. An incision is now made over the greatest prominence of the prostate, which is usually a little behind the urethral orifice. It is very important to find the proper layer for a satisfactory and successful separation. If the first incision is carried too deeply the difficulties and dangers of the operation are greatly increased, and much trouble may be experienced from wounding the venous plexus surrounding the neck of the bladder.

When the forefinger has found the proper layer of easy enucleation, one or two fingers of the other hand are inserted into the rectum to act as a guide and to push the gland upward and forward. The separation is carried on behind, at the sides, and in front of the prostate, the finger being kept close to the prostate until the gland is free, except below where the urethra attaches it to the triangular ligament. The finger is then bent behind the urethra and hooks the prostate and urethra upward and forward, with the result that the urethra breaks off at or above the insertion of the ejaculatory ducts. The tumor can then be withdrawn from the bladder with suitable forceps. Before the finger is withdrawn from the rectum, the wall of the cavity which contained the prostate is compressed so as to lessen the size of the space that is left to heal. After the removal of the prostate the bladder is washed out through the urethral catheter which is still in position.

A large rubber tube is used for drainage, care being taken that it projects only about one inch into the cavity of the bladder. I always close the bladder wall tight around the drainage tube and invert the cut edges. This inverting of the incised wound in the bladder and the partial closure of the same very materially shorten the period of healing of the sinus. A small gauze wick is placed in the wound superficially and the parietal tissues are approximated in the usual way.

Much depends during the aftertreatment upon free drainage being maintained. The drainage tubes should be about one inch in diameter. This size of tubing enables one to irrigate the bladder through it with a glass tube or small glass catheter attached to an irrigator. At the same time there is space enough for the fluid to return freely through the drainage tube, thereby removing clots or other material without back pressure. Irrigation in this manner should be carried out once daily. The outer dressings should be frequently changed in order to keep the skin in good condition. The drainage tube is usually removed on the fourth to the sixth day. Irrigation is then continued through the sinus as long as it is practicable.

The patient should begin to sit up as early as possible, beginning with bed rest or pillows on the second day. The urine begins to come away through the urethra after about twelve or fifteen days. At the end of three weeks very little leaks through the suprapubic sinus.

There are no half measures about this operation. The patient always regains the power of voluntary micturition without the aid of a catheter. There are no instances in my experience of relapse of symptoms. Time only seems to consolidate the cure, for after a lapse of months, patients state they feel ten or more years younger than before the operation.

CONCLUSIONS.

1. We must acknowledge that the recent work of Tandler and Zuckerkandl has substantially advanced our knowledge of the anatomy and surgical pathology of the prostate. It has further changed our ideas as to what actually takes place in the operation of prostatectomy and the anatomical regeneration therefrom. Most remarkable, however, is the fact that a hypertrophy of all parts of the prostate does not exist. Contrary to our old beliefs, the middle lobe and portion toward the bladder is always affected. Remarkable also is the fact that the prostate can be only artificially enucleated from its anatomical capsule. The capsule in the surgical sense, as has been already stated, is formed of atrophied prostatic tissue, which has been compressed by the hypertrophied portion of the gland. Therefore, these aforesaid facts resulting from the work

of these investigators, are of extreme importance and form an essential advance in regard to the surgical aspect of the prostate.

2. The proper and early treatment of a patient suffering from prostatism is most essential. The catheter should never be used habitually, and if its use becomes necessary in relieving acute retention, then the most scrupulous asepsis should be observed. Experience has demonstrated that the benign prostate has a tendency also to assume cancerous degeneration under the irritating influence of prolonged catheterization and its resulting complications. The ideal time for operation is before toleration and infection, and should be performed as soon as the presence of sufficient residual urine indicates the progression of the disease.

3. Prostatectomy is not an operation to be attempted by an inexperienced surgeon. If the veteran in judgment and technic is ever needed in surgical procedure, certainly then the operator of known quality and skill is required in the management of prostatectomies. Even the most experienced are frequently puzzled with the unknown factors and conditions met with in operating by either route. The mechanical ability of the operator to perform certain acts with absolute regularity and precision is of great importance in regard to its bearing on the length of the operation. The action of an untrained individual's mind and nerves under varying degrees of excitement, is one of the factors that are extremely hard to control, especially if the case is that of a hard fibrous gland. Satisfactory work can be accomplished only by the man whose mind and nerves have been trained to that very sort of thing. They must work with automatic rapidity, without effort, under all circumstances, thereby saving time. There is also then as a result less handling of the parts, less resultant shock, and less anesthesia required. The rapidity with which the operation is accomplished on account of the advanced ages of these patients is of the most vital importance; furthermore, the anesthesia should be profound only during the period that elapses between incising the skin and the delivery of the prostate from the bladder.

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GASTROINTESTINAL THERAPY.*

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I desire in presenting the remarks which follow to enter a protest against the lodgment in any one's mind of so narrow a conception of the word therapy as to restrict it to the administration of drugs. On the contrary, I insist that it shall have the widest possible scope, the fullest meaning of the application of every legitimate remedy, no matter what, that may be used for the relief or cure of the affections of the stomach or bowels. Many years of observation of affections of the gastrointestinal canal have convinced me that treatment of these disorders is too commonly narrowed down to medication solely of the stomach or bowels, and so called dyspepsia comes to be an opprobrium to medical science, often through the guessing treatment of some doctor. If the digestive disturbance is not due to organic lesion of the stomach or bowels, such as ulcer or cancer or pyloric constriction from contracture of the cicatrix of a healed ulcer, causing gastric dilatation; or, in the case of the intestines, adhesions, such as a Lane's kink, or otherwise; in a word, if functional, most commonly the digestive disturbance is due to reflexes from trouble located elsewhere: liver, kidneys, heart, pelvic organs, or gallbladder. Or it may be that nervous let down may be behind a too slow gastric motility, allowing fermentation of a most distressing character, resulting in time in a mechanical dilatation of the stomach, and this, perchance, may be emphasized, because, as the result of a reflex and intractable condition, a pylorospasm may be developed; in other words, a number of lesions, outside of the stomach, any one of which would be sufficient to form a vicious circle, all of which causes must be removed to bring about a cure. The investigation of gastrointestinal disturbance by test meals and gastric analysis to determine the relative proportion of the constituents of the gastric juice may, or may not be of value. The analysis can at best tell us what the conditions are at the time that the test meal is withdrawn, but that may not indicate that the excess of butyric and lactic acids, and absence of the proper proportion of hydrochloric acid is really the true condition responsible for defective digestion. We do not know how much gastric juice it takes to digest a meal, and if the innervation of the stomach is faulty and consequently motility is defective, even a normal gastric juice cannot complete the digestion of the stomach contents, and fermentation of necessity takes place, and mechanical dilatation of the stomach results. Nor must it be lost sight of in this connection that the capacity of the stomach varies in different individuals. A capacity, however, in the adult under 800 c. c. or over 2,000 c. c. is abnormal (Gillespie). Then, too, the stage of digestion must be considered.

The first stage lasts from fifteen to forty minutes, the acidity of the contents is always rising, but the hydrochloric acid being secreted is in combination with the salts and proteids, so no free hydrochloric acid can be detected. This stage is often marked by the presence of lactic acid in the contents of the stomach; it may be contained in the food, or be due to the action of microorganisms. The hydrochloric acid, upon which the acidity of the gastric juice is based, being in combination with proteids and organic salts, exerts weak antiseptic action and the lactic organisms flourish unchecked. In the second stage the hydrochloric acid is still being secreted, the total acidity of the gastric juice continues to rise, and the hydrochloric acid is now susceptible of detection; more is being secreted than can combine with the proteids and some antiseptic action is exerted, fermentation is checked, and lactic acid disappears. When the maximum acidity has been attained the third stage follows, the gastric contents have largely

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been propelled through the pylorus, and the amount of hydrochloric acid in combination with the proteids is diminished and the total acidity falls. The duration of the several stages of digestion is affected by the kind of diet, and the amount of proteids in consequence, if largely carbohydrate, the first stage is short, and the second stage is characterized by a larger amount of hydrochloric acid, though the total acidity does not rise, nor is it even well marked. If the meal is largely proteid, free hydrochloric acid is slow in appearing in the gastric contents, the total acidity may rise to a high point, though the free acid present may be small in amount. In the third stage after such a meal, the total falls, and this condition may be slow and not attained for several hours.

Hence the value of a mixed diet of proteids and carbohydrates that a happy medium between these two extremes may be reached. The cited facts being true, and I believe they are not disputed, emphasizes the fact that the conclusions drawn from the analysis of a test meal may or may not be correct. Clinically they give emphasis to the direction of a correct diet in pathological conditions of the gastrointestinal tract. This point is to be reached only by the most analytical investigation into the diet of the patient, and its ordering so as to meet the conditions demanding relief. Nor must we forget that functionally the stomach may be all right in itself, and some outside affection of appendix, gallbladder, pancreas, or pelvic viscera may lie at the bottom of it all, and be relieved only by prompt surgical intervention. Nervous breakdown in the business man, abuse of tobacco and alcohol, eyestrain, the tension of household cares, and other exacting duties in women may find their climax in intractable gastric disturbance, manifested by impaired gastric motility, fermentation, gastric dilatation, and acute pain, secondary nervous depression, and paroxysms of hysteria. In these cases all the drugs in creation will not effect a cure, or even retard the progress of the trouble. Metabolic disturbance becomes most marked and nutrition suffering carries in its wake anemia and emaciation, and a still further outcry from the suffering nervous system. Here the first essential in the therapy is rest, rest of body and mind; all other treatment will be of no avail without it.

Restoration of tone in the nervous system results in improved gastric motility, therefore a more thorough because more rapid digestion, gastric dilatation diminishing and finally disappearing. Furthermore, in the most simple forms of indigestion, functional in character, short in duration, and brought on by imprudence in diet, quiet, abstinence, and a good mercurial purge will remove the trouble. But we must not lose sight of the fact that the human stomach is given less chance, and is more abused than any other organ in the body and it is kept more constantly on duty. The unrestrained appetites of men and women, many of whom live to eat, and do not eat to live, reckless of the time of meals, eating heavy meals, rich, stimulating, and of difficult digestion, at late dinners, or late at night, when the body is weary after the day's labors, or after the tiring exertion of sight seeing, or responding to the demands of society. At night, when the viscus should have a time for rest, when the machine is slowed down to its limit for repair, the stomach is working on laboriously to rid itself of the late meal, and rest and repair come not. After a night disturbed by dreams, the man or woman awakes in the morning; languid, "headachey," bad taste in the mouth, foul breath, little or no appetite for breakfast, and not feeling up to the mark until after midday. And then comes a repetition of the day before. Look at the girl in fashionable society, night turned into day; consider what she eats, and when, and how; combinations of salads and sweets, champagne and Rhine wine and sherry, etc. Consider the abomination of dress in the modern corset, confining and displacing her viscera, distorted spine from French heels on her shoes, the shock to her nervous system through sparsely clothed extremities and improperly shod feet. Look at her at the season's end, when the wreck is brought to us for repair, thin, pasty complexion, digestion broken down, constipated, suffering with dysmenorrhea or amenorrhea, nervous, cross, not fitted to be a thing of beauty or a joy forever. What of drugs here? Nought. Absolute reformation from all of these things only can bring relief. Yet how often do we see cases such as I have mentioned that the doctor is trying to relieve or cure by pouring down drugs, digestive ferments, or all sorts of proprietary concoctions, etc., *ad nauseam,* and the patient drifts to some quack to the opprobrium of legitimate medicine.

But there is another side and a graver one to this discussion. At the recent meeting of the State Medical Society of Virginia, a joint paper on Intestinal Stasis was presented by Dr. J. Shelton Horseley and myself. That paper was based on three cases of intractable indigestion. Pain was a constant symptom in all three of them, in one just in the left hypochondrium, bowels obstinately constipated; in another the same symptoms of constipation, but pain running across the hypogastric and iliac regions, with pasty complexion. In the third, the discomfort was intense, burning pain coming on in the afternoon and increasing in violence until at times it was agonizing. Drugs proving futile, these cases were referred to Doctor Horseley and were operated in by him. Extensive adhesions, chronic appendicitis, and disease of the gallbladder were found. All made perfect recoveries (*American Journal of Surgery,* December 12, 1912).

A fourth case has recently come under observation, that of a patient, fifty-seven years old, clergyman, usually in good health, in charge of a large church, and led an active life, had not been up to his usual standard of health for several months, tongue obstinately coated with a brown fur, no evidence of indigestion, except heart burn, so trifling that he did not mention it to his doctor. He was seized on January 12th, while closing the Sunday school, suddenly became faint, lost consciousness, and then vomited, throwing up his breakfast undigested and about a pint of blood. A second hemorrhage occurred at 3 p. m. the same day. The shock was profound and it was several hours before he reacted under the most powerful stimulation of strychnine, adrenalin, atropine, morphine, and ergotine. The next day his condition was very good. On the morning of January 14th he had the third hemorrhage and his bad condition became extreme. Ulcer of the stomach had been diagnosticated when he was first seen on the 12th. Doctor Horseley was called in consultation for transfusion of blood and

further surgical intervention. The patient was hurried to St. Elizabeth Hospital, it being a question if he would reach there alive. Transfusion was immediately performed, abdominal section made, and an ulcer found on the anterior inferior wall of the stomach, about one and a half inch from the pyloric orifice. The pylorus was closed and a gastrojejunostomy done. At the time of operation, before the transfusion, the hemoglobin was twenty per cent.; ten days after the operation it had risen to seventy per cent. This man has made an uneventful recovery, and has had scarcely a hint of indigestion since the operation.

I have referred to these cases to call attention to the fact of how very obscure these serious troubles of the stomach may be, and especially to emphasize the great importance in cases of intractable gastrointestinal disease, of calling to our aid the counsel of a competent surgeon, and further to emphasize the fact stated in the opening of this paper, that often the cause producing gastrointestinal trouble is some organic lesion, if not cancer or ulcer, situated outside of the stomach.

I wish briefly to call attention to two drugs, useful above all others in my experience, in the treatment of digestive troubles, *strychnine* and *condurango*. The physiological action of strychnine points to its value, a bitter tonic, a stimulant of the vasomotor nerves on the muscular coat of the stomach and bowels, quickening gastric motility, vascularity of its mucous lining, and consequently a gastric juice of improved digestive power is secreted. By quickening peristalsis, it helps the normal emptying of the bowel. It stimulates the motor nerve cells of the spinal cord, the cardiac motor ganglia, the respiratory and vasomotor centres of the medulla, contracting the arterioles all over the body (although by full doses they are relaxed), and the excitability of the sensory nerves and their terminal elements. The result is that respiration is increased and the blood pressure raised (Potter, in *Practical Therapeutics* by Foster, p. 26).

Condurango figures sparsely in literature, and I fail to find anything satisfactory about it. It is described as an astringent bitter tonic. But careful clinical observation for several years proves it to be more. I have observed that in susceptible patients it produces ringing in the ears and vertigo. It has demonstrated a special power over the muscular coat of the stomach by increasing its motility, and I have an abiding faith in its efficacy in that form of digestive disorder characterized by distressing flatulence. I usually give it in forty drop doses, of the fluid extract, sometimes alone, at other times in combination with strychnine and dilute hydrochloric acid.

In conclusion, to sum up, it is contended that the simpler forms of gastrointestinal disorder are purely functional, from acute disagreement of some article or articles of food; that a more obstinate form is due to no fault of the stomach primarily, but is the result of reflexes of a lesion or lesions elsewhere forming a vicious circle, or to eyestrain; that the most intractable cases that we see depend upon early pregnancy, when the uterus is found at too low a level and retroverted, to some pelvic lesion, to appendicitis, galltract disease, intestinal adhesions, etc.; that in these latter cases the assistance of a competent surgeon should be sought early as giving the only promise of cure.

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MEDICAL EXPERTS

And Expert Medical Testimony.

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In this modern strenuous age in which we are living, we are judged, as a class, not so much by the work we actually accomplish as by that part of it which succeeds in reaching the eyes and ears of the public through the medium of utterances of men supposed to be representative of our class. This is especially the case at the present time with the medical profession. They have been judged, and misjudged, by the general public at least, from the actions and especially the utterances of the few who have managed to drift into the limelight as expert witnesses. When the physician testifies on opinion as an expert in medical questions, he is presumed to be voicing the opinion of the entire medical profession, and to be representative of its ability and honesty. He is understood to be giving to the public the gist or result of all the work, research, and knowledge in that branch of the science whereof he speaks. It has not, therefore, enhanced the reputation of the profession when experts so frequently give widely different and wholly inconsistent opinions on apparently similar matters. Many of the laity consider such diametrically opposed statements of opinions as expressions of ignorance, but more especially of bias and dishonesty. There is a tendency to deny their need or usefulness. Yet the province of the expert has been recognized for a long time. The more the sciences, and especially their individual branches, become separated and crystallized, the more removed will they be from the knowledge of the general public, and the more will it be necessary for the public to call to its aid such persons as are thoroughly versed in them. This is the age of the specialist in all branches of human endeavor. In the medical sciences especially, has nearly every branch of it become so vast, every new discovery an opening for trackless fields of research, that it is well nigh impossible for an individual to keep pace with more than one branch. Indeed, to illustrate the rapid strides made in the medical sciences, it can well be said that the expert of yesterday would be an ignoramus to-day. To be sure, the range of the expert may be very narrow, but in the details of his own specialty it is very broad. It is for this reason that he is called upon to give his opinion on the significance of matters falling within his sphere of activity, on the assumption that somewhere in his studies and researches he has come upon conditions similar, or as nearly similar as possible to the condition in question. In jurisprudence these opinions are given for the information of those called upon to determine controversies in which the scientific question

is a part, but who from ignorance of the scientific subject are unable to form an opinion of their own.

Opinion evidence is the definite and necessary outcome of the Anglo-American jury system. On the continent, where the jury system is not an established institution, such evidence has as yet no place. It was well understood even in early times that while juries were the sole and final arbiters of questions of fact, they were recruited from the general citizenship, who had only a general and therefore inaccurate knowledge of even general topics, who were not particularly conversant with any one topic, and who had therefore to be assisted in deciding matters involving special knowledge by those having this special or expert knowledge. The theory on which opinion evidence was nevertheless sought to be excluded from the legal proceedings, whether it was lay or expert, was that the witness must be a "knower," and not a "guesser." "We want what you know and not what you think. We can all opine as well as you, but we cannot all have personal knowledge of the facts." In early jurisprudence, moreover, it was a serious objection to the admission of expert or other opinion evidence that the witness could not be prosecuted for perjury in knowingly giving a false opinion. Now it is just as much a crime to give false opinions as make false statements of fact. Both are perjury.

The rule on the admission of opinion evidence is that only when the jury is for any reason incompetent to infer or form an opinion, will such evidence be admitted to influence that body; or, if the facts alone were admitted, they would be stated so poorly that their significance could not be comprehended sufficiently for the jury to form an opinion of its own. "The poverty of human language makes it impossible to separate in words the minute and transient facts, by a witness, from inferences as to some other facts irresistibly connected with the former, in his own mind" (1). Opinions are admitted in any event only to aid the jury and are in no manner binding on it. In scientific matters, even if the facts were lucidly stated, their meaning would not be comprehended by those not familiar with these subjects, and would be tantamount to the poorly stated facts of a layman. For this reason, after all the facts have been stated, an opinion becomes necessary in order to characterize and summarize for the jury the facts already stated by other witnesses. The admission of expert or opinion evidence on given or observed facts really amounts to making the expert or opinion witnesses collateral jurors on the scientific matters involved in the controversy. Their opinions are then submitted to the real jury as new facts to be considered with other facts adduced at the trial. This doctrine is tenable when it is considered that if the jury was composed entirely of such men as have been trained in the branch of science around which the subject of the trial is centred, the mere presentation to them of the facts in question would be sufficiently comprehensive on which to base an opinion. Conceded, then, that the jurors have not this training, they can form no opinion, and they must delegate this power to such individuals as have had this training—the expert witnesses. The opinions of the experts must, thereafter, become their own. In performing its function the jury really acts in an expert capacity, only that it is on facts capable of common understanding. It is for this very purpose that they are chosen. Logically carried out, this theory would mean the selection of juries, and possibly only collateral to the main or principal juries, who are familiar with the subject on which they are to be called to pass judgment. Judges decide legal questions, on which they are the constituted qualified experts; business men should decide business and commercial method and usages under litigation; and medical men or scientists should act as jurors or quasijudges in deciding medical or scientific questions.

Even in ordinary, that is, lay matters, the differences between expressions of fact, opinion, and knowledge are not very great; they frequently run into each other or are used interchangably. Even the simplest sensations require a degree of judgment for their proper interpretation. In other words, statements purporting to be of fact are frequently only statements of opinion. The line of demarcation between them is never very sharply drawn. In any event, however, if the opinion given or intended to be given is of such a nature that from the facts presented the jury itself is able to draw conclusions or make inferences, it is inadmissable because irrevelant. But since, in scientific or technical matters, no such ability usually exists in the court or jury, the latter, therefore, being unable to determine the scientific or technical weights of the facts presented, must call to their aid those who can interpret the technical language into the lay. Yet even though the necessity for expert witnesses was long ago recognized, they always acted independently of the legal proceedings, that is, collateral to them. For their testimony was admitted only by the special consent, either actual or implied, of the court, and then carried no more weight, if any, than the court or jury chose to give to it. Here again the early jurisprudence objected to the admission of opinion witnesses on the ground that their admission served to usurp the opinion forming function of the jury. The term "witness" itself, they said, implied presence and therefore *personal* knowledge of the facts.

As early as the year 1353, the English law reports cite a case in which "skilled surgeons were summoned from London to inform the court whether the wound was mayhem or not" (2). Subsequently, as the sciences became more highly specialized and separated, this usage became an established step in legal procedure. "I grant," says the court, "that matters arise in our law which concern other sciences and faculties, and we commonly apply for the aid of that science or faculty which it concerns; which is an honorable and commendable thing in our law" (3).

Skilled or expert witnesses can give their testimony only after it has been established that they are in fact skilled and expert in the branches of the science about which they are to testify. The competency of skilled witnesses was presumed to have arisen on the theory of "experimental qualifications"; that is, they were such persons as gained their particular skill from devotion of all their time and energies to work, research, and especially ex-

perimentation in the subjects about which they were to testify. The value of experimentation as a means of acquiring proficiency and expert knowledge was, then, recognized, even in very early times. Yet because of this extraordinary exception to the rule of procedure, allowing the introduction of evidence not of fact, it had to be clearly established before the admission of this evidence that the person to be introduced as an expert was one in fact, because of his "experimental qualifications," and one, therefore, on whose opinions reliance could be placed. The competency of an expert was a question solely for the court to determine (4). Only *prima facie* evidence of competence need be established before allowing the expert to testify (5). The court's decision on this question is not, however, final. It is reviewable by an appellate court (6). The judge must decide in the first instance who is an expert and who is not. He is thus an expert on experts.

A physician, though not qualifying as an expert, may, however, after detailing all the facts within his personal knowledge, give his opinion on them, but, as in all cases, the jury decides what weight, if any, shall be given to that opinion (7). The courts are at present inclined to give more weight, and so to advise the jury, to the opinions of nonexpert physicians having personal knowledge of the facts, than to those of experts; and in the case of insanity, even though the physician is not conversant with the subject (8).

After the qualifications of the expert have been primarily established, by having set forth his length of practice, specializations, institutional affiliations, authorship, etc., he can give his opinion on the matter in question. The crossexamination which follows has for its object mainly the determination of the witness's degree of expertness. If in the opinion of the court the expert does not evince sufficient capacity in his branch it will order the jury to disregard his testimony (9). Even if admitted the jury decides for itself the value of that opinion from the general impression of credibility made by the witness, and on his apparent skill and learning. When admitted, the opinion becomes new fact, the value of which is decided as is the value of the other facts.

In most States it is not essential that an expert in medical matters be a licensed physician, on the ground that the line between chemistry, biology, and medicine is too indefinite to admit of practical separation. Indeed, in many branches of the medical sciences the research work is carried on almost entirely by nonmedical men. They teach in the medical schools as well as in the postgraduate schools. The immortal Louis Pasteur is a shining example of a nonmedical man making discoveries in medicine.

The crossexamination of the expert is carried out by one of the attorneys. His knowledge of the medical question before the court is usually very meagre. Often it is based on a hurried reading of medical works on the subject. In actual practice, however, each side hires experts whose duty it is, beside testifying, to prepare the questions to be asked the opposing expert on crossexamination, in the efforts to discredit him in the eyes of the court or jury. The questions are not formulated with a view toward arriving at an honest and fair determination of the witness's qualification and ability, but are designed almost entirely to catch him on such usually insignificant details that his confession of ignorance of them will create the impression that the witness is incompetent, and in this way discredit his testimony. Further to test the expert, standard medical works can be introduced to show that the statements made on this examination were false. In no case, however, can medical works be used to establish or rebut medical questions before the court. These can be determined only from the stated opinions of the experts if admitted. Dry opinions are not admitted. They must be preceded and based on facts adduced at the trial, and stated either by the expert himself or by other witnesses. As regards the value of standard works to prove a fact, the courts have admitted the value of standard textbooks in their own profession, and have used them as the bases for their decisions. The United States Supreme Court held that "treatises written by jurists and commentators who by years of labor, research, and experience have made themselves peculiarly well acquainted with the subject they treat, are resorted to by the courts for trustworthy evidence of what the law really is" (10). This applies to medicine far more justly than to law, since with all its inexactness medicine is a far more exact science than is law. Medicine deals with facts in Nature, fixed and settled. Its inexactness lies only in the incompleteness of the knowledge therein at the present time. Law varies according to the body of law makers that enact it, or according to the thoroughness of the judge who interprets it.

When opinion evidence is admitted from lay witnesses, the opinions must be based on facts within their own knowledge. Witnesses who qualify as experts, on the contrary, may give opinions on facts not within their own knowledge, as well as on facts that are. An expert may give his opinion on the significance of facts stated to him, which facts arose at the trial, but of which he need have no personal knowledge. In most jurisdictions, the facts arising at the trial must be formally propounded to the expert in the form of a question before an opinion can be given, even if the expert was present at the trial and heard the presentation of the testimony. This *formal* statement of the facts, in question form, is called a "hypothetical question." The "hypothetical questions" are long and involved, having a tendency, and are unquestionably designed to confound those who should be enlightened by them. They are prepared in advance of their proposition, and usually by the expert for whose opinion they are designed. Often these questions are so long and involved that without such previous preparation it would be hard to follow the trend of thought contained therein and give any answer at all (11). In some States, and with far more logic, an expert can give an opinion on the facts he heard adduced at the trial throughout which he was present, without waiting for the propounding of a formal or "hypothetical question." He must here state the facts on which his opinion is based, and his reasons. "When an expert states his reasons or 'facts,' the court will be ready to

listen to his conclusions or inferences." In these jurisdictions he becomes really a juror on the scientific facts, but collateral to the main or real jury.

In the subject of insanity we have the stumbling block for the experts. The indefiniteness of the whole subject, and the consequent difference of opinion thereon. has been the means of casting more discredit on the medical profession than any other element (12). The public seems willing enough to accept, often without question, expert opinion on other medical matters, but when psychiatric questions are concerned they become very skeptical. In common law times every one was allowed to give opinions on sanity or insanity. "All men," every one said, "could appreciate how rational persons acted, and if they acted differently they were not normal mentally." This rather extreme point of view is not now held by the courts generally, because even they seem to recognize the fact that psychiatry is a subject in which special training and study are required, and which cannot, therefore, be within the understanding of every one. at least not sufficiently to justify the taking of liberty or property. In the determination of the mental condition of a deceased person, all jurisdictions allow lay witnesses to testify. Very recently, and owing largely to the frequent and almost "scandalously" opposed opinions expressed by different alienists on the same statement of fact or on a given case, there has been a growing tendency on the part of the courts to minimize the value, and even the sincerity of expert opinions. They seem to lend to a reversion to the old rule of allowing all witnesses to testify on this condition, and even to give to the testimony of the lay witnesses more weight than to that of the experts when they testify in the same case. A judicial dictum illustrating this tendency held: "If there is any kind of testimony that is not only of no value, but even worse than that, it is, in my opinion, that of medical experts upon the question of mental unsoundness. They may be able to state the diagnosis most learnedly; but upon the question whether it had at a given time reached such a stage that the subject of it was incapable of making a contract, or irresponsible for his acts, the opinions of his neighbors, if men of good common sense, would be worth far more than those of all the experts in the country" (13). While part of this *opinion* is not without truth—that part which doubts the ability of experts to determine from the conflicting statements regarding the acts of the individual in question, the mental capacity of such a one—yet it need not be given much heed, because, on the whole, it is only an expression of general contempt for the integrity of those engaged in a fellow profession. Judges themselves pass opinions on statements of fact of which they have no personal knowledge. That they could pass more accurate opinions were they personally acquainted with the facts goes without saying, but obviously that could not be possible in all cases. Giving an opinion on the common sense capacities of individuals itself savors of expert opinion. Indeed, it is far harder to form an opinion on a man's common sense, because that question involves a multiplicity of circumstances and facts, than on the question of his sanity, the latter being usually based on particular actions or expressions of the mind.

Expert opinion is to be given only in the light of, or received as a statement of fact. As a mere conjecture it has no right to jeopardize the life, liberty, or property of an individual. "Expert opinion is really fact, but not of personal knowledge" (14). Scientific data or doctrines are facts, at least until such time as new discoveries change them, and then the new discoveries must be the generally accepted ones in that subject, and not present only in the minds of the discoverers. A standard is thus established in medicine. In a homicide case, however, where an expert used a then recognized chemical test, and found poison with it, a new discovery repudiating that method was held sufficient to reopen the case. Nevertheless, though the medical sciences are not exact, there have still been established incontrovertible facts which can universally be accepted, freed from any taint of uncertainty, and on which differences of opinion can be placed at the door of insincerity or ignorance. In the minority decision of the United States Supreme Court on the interpretation of the Food and Drug Act of June 30, 1906, the court recognized this principle when it held that "granting the wide domain of opinions and allowing the broadest range to conflict of medical views, there still remains a field where statements (of conflicting opinions) are downright frauds and in no case expressions of opinion" (15).

The admission of expert opinion to influence the court or jury, is, then, only a rule of necessity, because in the absence of better evidence the opinion becomes a fact and can thus be admitted. Medical opinions usually concern the "internal actuality" rather than external appearances. The former is determined in a given instance by deduction based on analogical studies, researches, and experimentations, with as nearly similar subject matters as is possible. "Things equal to the same thing are equal to one another," even though it is really in mathematics only where we can have absolute certainty or equality. Differences of opinion on the same facts is the same thing as different versions of the same happening by different witnesses; they are influenced by the personal equations of the persons stating them. When the only facts adduced are these opinion facts, or when the opinion facts preponderate, they constitute the preponderance of evidence, on which a contrary finding by the court or jury is "against the weight of evidence" (16). "When there is no conflict in the expert evidence the jury cannot use their own 'judgment' and find to the contrary." Very few courts adhere to this principle. Most of them, even though the opinions of the experts on both sides agree in every respect, direct the juries to disregard them. On questions of insanity especially have the juries been told to use their "common sense" rather than to rely on the opinions of medical men (17).

While it is true that the opinions of some of the experts vary according to the interests which they represent, yet most of blame can fairly be placed at the door of the judicial procedure which encourages litigants to chose their own judges of the scientific questions involved—the experts. For after an expert is qualified he is asked to give his

own individual opinion on the question. He is not required to state the accepted doctrines or teachings on this subject. If only a statement of the accepted doctrines was asked and stated, there would be little likelihood of such wide differences of opinions on similar matters as are now usually expressed. Such disputes would then be determined from a standard. It is then better to ask an expert what the consensus of the medical profession is on such a question, on which a qualified expert would be the best informed person. He might even be asked to state the opinions of most of the men qualified as he is, even though he himself holds a different opinion. Every physician knows whether his opinions are at variance with the accepted ones or not. Opinions given in this way would be strengthened by comparison with standard medical works on the subject. It is always the latest *accepted* doctrine which is of value as a standard, and not an expert's own theory which is, perhaps, yet unpresented to the world, or if presented, not yet accepted. The latter should receive no notice in a court on the same principle on which a new legal principle receives no recognition therein until adopted by the courts. A physician does not usually possess much advanced knowledge, or hold opinions which he does not share with the other workers in his own particular branch of the medical sciences. But even if he does, it should not be available to affect the rights of others until, at least, it is so shared. It is conceivable that some of the so called experts who qualify because they apparently have had long years of experience, institutional connections, or have written works on scientific subjects, may hold "bizarre and whimsical ideas which may even be delusional in nature"; they may be summoned to testify only because they have been found to hold these opinions, being, possibly, just the kind of opinions suited to the pleas of the parties hiring them. And even though medical men in general repudiate these views, they have no way of signifying their disapproval, except as their opinions are expressed in the standard medical works on the subject and in use at the time. The present legal procedure does not yet admit these to determine the scientific questions involved in the controversy (15). They still adhere to the personal opinion doctrine in expert testimony. "No one," they say, "has any title to respect as an expert, or has any right to give an opinion on the stand, unless *it is his own opinion;* and if he has not given the subject involved such careful and discriminating study as has resulted in the formation of a definite opinion, he has no business to give it. Such an opinion can be safely formed or expressed only by persons who have made the scientific questions involved matters of definite and intelligent study, and who by such applications have made up their *own* minds" (18). When only personal individual opinions are desired, then differences of opinions are natural and to be an expected outcome. Mere personal opinions may vary with the persons who express them. When experts are hired to investigate certain scientific matters, as in chemical analyses, bacteriological and anatomical examinations, etc., their own results, conclusions, or inferences are, obviously, desired. Such work is really in the nature of personal professional services and not merely dry expert opinion. In these cases the expert is required to have made the investigations especially for this instance, and he can only testify if he has done so. His compensation accrues only, as it does in the case of personal services, from actually having performed the services or investigations. On this ground he can demand a "retainer" before commencing work (19). A physician merely stating the facts coming to his knowledge is not an expert and not entitled to compensation (20). Nevertheless, opinions based on special investigations, while facts, yet entitle the investigator to special compensation.

Now, when the testimony touches mere "speculative psychology," that is, as to the probability of a person being unsound mentally, based only on the consideration of certain words or acts related to, or in the presence of the expert, by witnesses of fact, it is to be considered merely an argument, and not an opinion fact; and the arguments are submitted to the court for determination as to which side has the better argument. Considered in this light, it is hardly a very edifying spectacle, nor does it help to raise the standing of the profession, to see representative medical men engaging in these arguments, before a lay body—the jury. It is in this very thing in which physicians become involved when they attempt to express their opinions on "hypothetical questions." When given on questions in the more exact branches of the medical sciences, these opinions may be excusable. given on psychiatric probabilities, they are reprehensible. The "hypothetical question" is an error in legal procedure and should, therefore, be abolished. As a basis for diagnosticating the mental condition of an individual not actually examined, it can be of little value. A diagnosis of mental disease is difficult even after long observation; when finally made it is often the subject of revision. Its justification, if any, now lies only in its tolerance in the present legal procedure. Even then it is only taken for what it is worth, for at best it is only a problem in chance. The conscientious scientific physician should not testify on "hypothetical questions," especially when he has not even heard the facts on which he is asked to express an opinion recited, any more than he would be willing to sign the commitment papers merely on hearing the symptoms related by a third person, even if that person were a medical man. The public seems to be firmly convinced that experts can be hired to suit any opinion desired. Even if they are honest in their expressions of opinion, that fact can in no way undo the harm. Experts are really the judges in scientific matters, and it is neither politic nor just to have such judges or jurors employed by the interested parties. As long as it is possible to search through the list of the avowed experts until one or more are found who hold the desired opinions, so long must chaos exist in the science of medical jurisprudence.

The question of the medical expert is becoming a more and more acute one every day, and a solution for it must soon be found. The medical profession is the most concerned in this problem, and from it must come the remedial plans and overtures.

Since expert opinion is in fact judicial opinion, the power of expressing these opinions must be vested in individuals or commissions, judicial in nature, especially appointed for such purposes, either by an executive, as in the case of many judges, or by a judicial officer in each case as is done in the appointment of referees or masters in chancery. The functions of these officers are to take testimony in such matters as are considered too complicated for the juries or too cumbersome for the judges—in "numerous litigated items," as they say in legal verbiage. The findings of fact by these officers are submitted to the court who, though it cannot usually alter them, can reject them entirely as unsatisfactory and refer the matter to a new referee or master in chancery, as the case may be. Similarly, medical questions are "numerous litigated items," and their reference to a *referee in medicine* would make for a more thorough adjudication of the questions in controversy, and with much less opportunity for bias. Yet both sides could bring their talent before the referee, who, being familiar with the scientific matters in question, could give the opinions of the experts their proper weight. The findings of such a referee would also be submitted and received as facts to be considered with the other facts in the case. The absence of any apparent bias by this method would inspire confidence in all concerned, even though not ultimating in bringing before a court such an array of talent as is brought when the usual method is pursued.

On the continent, especially in Germany and Austria, a public medical officer or officers act as experts and decide these questions for the courts. An appeal may lie to an impartial board recommended by what would be equivalent to our State medical associations. The United States tried a similar procedure in the appointment of the Remsen board. The federal, State, and municipal health authorities might be drawn upon for similar duties in controversies before the court. Their findings would have, at least, more uniformity. Hired experts are more likely to be biased, especially those who hold themselves out to the public as experts, because the interests we serve unconsciously influence us in their direction (21). When expert medical testimony is taken out of the hands of the litigating parties, and is put in the hands of the governing body, a much needed reform will have been accomplished. Then "not only will the dignity of the physical and psychological sciences be vindicated, but the science of jurisprudence, of all others the secular arbiter, will be able to discharge its great office with the precision, the wisdom, and the system which are necessary to the welfare of the community, but which are unattainable when so important a subsidiary agency as expert testimony remains in the chaos in which it is now plunged" (22).

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ELLIS ISLAND.

THE SURGICAL ASPECT OF GASTRIC ULCER.*

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In this series of twenty-two operations on the stomach occurring in my work recently, four gastrojejunostomies were performed for duodenal ulcers with no mortality. Eight gastrojejunostomies were done for gastric ulcer with one death; in this a vicious circle was formed and the patient refused further operative treatment until it was too late to remedy the defect. There were three excisions of chronic gastric ulcers; one situated in the posterior stomach wall, perforated, and adherent to the pancreas, in which a gastrojejunostomy was not done; another on the anterior gastric wall, perforated twenty-eight hours before the operation, and the patient, being thoroughly septic and exhausted, died the second day following the operation. The third was a somewhat similar case.

Four operations were done for advanced cancer, where a partial gastrectomy could not be done and in which a posterior gastrojejunostomy was done, with the Murphy button as a palliative measure. One of the patients died, within two weeks, of exhaustion, due largely to his starved condition. The others lived from six to twenty-four months in far greater comfort and ease than if they had been fed on morphine. The best behaved of this last group lived a little over two years, eating three meals a day, and so far as carcinoma and its symptoms went, was progressing well when he died of pneumonia. Gastrostomy was done in one case for cardiospasm, due to malignant disease of the cardiac orifice, death following in six weeks from an attack of acute Bright's disease coupled with exhaustion. In the second case of cardiospasm due to cicatricial contraction, the esophagus was dilated so that the patient could take food with very great comfort. This patient died of pneumonia several weeks after the treatment began.

In one case of cancer of the pyloric end of the stomach involving the pylorus itself, a partial gastrectomy was done. In this case, which was almost unsuitable for this operation because of adhesions present—the middle colic artery was injured—the patient survived but a few days.

In reference to the late treatment of these advanced and exhausted cases of gastric cancer, the following comment might be made: The obligation of the medical man, whether he be surgeon or physician, is to alleviate human suffering to the end.

*Read before the Alumni of St. Catharine's Hospital, and the Brooklyn Medical Society.

Should we then permit a secret desire for a reduced mortality to influence us to withhold our best efforts to put in force this great privilege? On the other hand, should the so called "take a chance" in doing a radical operation influence us when our judgment tells us that the best interest of our suffering and often doomed patient lies in palliation only? Should we do, for instance, a gastrostomy for cancer of the cardiac orifice, and colostomy in an inoperable cancer of the sigmoid or gastrojejunostomy, as a palliative measure in advanced cancer of the stomach wall, when partial or complete gastrectomy cannot be employed? They are, in my hands at least, more efficacious in every way, so far as prolongation and comfort of life are concerned, than to assign the patient to a morphine life.

The surgical historians state that "gastric surgery may be traced back to 1880, when von Mikulicz sutured a perforation on the lesser curvature of the stomach"—the patient did not recover. In 1881, Rydygier excised successfully an ulcer of the stomach. In the same year, Wolfer devised and performed the first anterior gastroenterostomy; this was done for cancer. In 1883, Doyen conceived and introduced the drainage operations for the relief of gastric ulcer. Since then, tardiness at first, and later, activity and evolution characterized the efforts of the surgeon, so that now nearly every kind of stomach derangement is brought under his care with very considerable success. From that excision of an ulcer on the posterior wall of the stomach, down to Carl Schlater's complete removal of the stomach, in 1897, there have been many devices, as well as many modifications of established operations, whereby stomach growths and gastric ulcers have been surgically treated. The diagnosis and differentiation of gastric ulcer is by far less advanced than its surgical treatment. Notwithstanding the fact that innumerable difficulties in differentiation have been cleared up, many problems in diagnosis still remain unsolved. The great similarity of symptoms in nonmalignant diseases of the stomach to other conditions frequently renders a positive conclusion so obscure that exploratory operation must be resorted to; even then the field is sometimes clouded. When the abdomen is opened it is rare that a chronic ulcer cannot be detected in the stomach wall when present, yet I have on more than one occasion been compelled to proceed with operation, with benefit to the patient where symptoms pointed strongly to ulcer, and yet no evidence of ulcer in the stomach wall could be found. This is well borne out by a case I had some time ago:

Case I. A young man, aged thirty years, had an acute attack of hematemesis, some three years previously, with pain and collapse, followed by a period of exhaustion which lasted for some weeks. His recovery under medical treatment was slow, but in time he was able to resume his ordinary duties. This attack was diagnosticated by the attending physician as an acute ulcer of the stomach. We have all seen cases of this kind in our work, and have learned that people seldom die from these acute ulcer hemorrhages and that an operation at this time is not advisable, unless the hemorrhage is accompanied by very sudden and severe pain with rapid pulse, subnormal temperature, localized tenderness, perhaps some distention, and it might be, if time would permit, some localized peritonitis. All this would suggest perforation, and such a case should be operated in at once.

A year previous to this man's coming to my office, which was two years following his acute attack, he began to have pyrosis, with other dyspeptic symptoms; pain on taking food became more pronounced over the epigastrium, radiating to the back; he was emaciated, complained that the pain just before he was operated upon occurred almost immediately after taking food; there was some vomiting at unusual periods; no blood since his acute attack; pulse rapid; no rise in temperature; free hydrochloric acid present.

The abdomen was opened in the usual way and a careful search made for an ulcer. The liver was raised and the stomach pulled forward; the greater and lesser curvatures with both cardiac and pyloric ends were searched, but no ulcer was found. The anterior wall was pushed over the posterior wall, but still no evidence whatever of ulcer; the abdomen was carefully gone over down to the ductus communis choledochus and was found normal. I was so convinced from the history and symptoms that there was a chronic ulcer present, that I refrained from opening the stomach. A posterior gastrojejunostomy was done with suture. The patient made a rapid recovery, remaining entirely well.

Dwelling on the difficulties of diagnosis in these peculiar cases at the last meeting of the American Medical Association, May 12, 1912, held at Atlantic City, N. J., Doctor Rovesing, of Copenhagen, has devised a method where many if not all the diagnostic difficulties in this class of cases may be overcome; he calls this method direct gastroduodenoscopy, and it consists of a gastroscope, introduced through the anterior wall of the stomach after proper exposure, whereby all creases in its mucous membrane are effaced and one sees the stomach shining like a large electric lamp; all its anatomical details are revealed with wonderful accuracy. Doctor Rovesing is enthusiastic as to the usefulness of this means of diagnosis.

The great responsibility which rests upon the medical profession in reference to gastric ulcer is well shown in a statement made by Doctor Welch (a most reliable authority) that five per cent. of mankind suffer from it. This responsibility is equally and obviously divided by the physician and surgeon. The surgical aspect of gastric ulcer is indeed so vast in importance and scope that it is impossible in a paper like this to go into details even of cases observed. It is almost impossible to separate symptomatically the duodenum, or more properly that portion of the duodenum above the opening of the common bile duct, from the stomach proper. Ulcers appear here because the duodenum is subject to much the same chemical influences as the stomach, and is the seat of similar disturbances, although a differential diagnosis can often be made.

The presence of gastric ulcer does not necessarily mean pain and vomiting; in other words, they are often latent, and sometimes the first symptom is perforation. Three principal types of ulcer are to be thought of, namely, erosions, acute, round ulcers and chronic ulcers. To the surgeon the last named is perhaps the most important, while the other forms are largely dealt with by physicians. The tuberculous and syphilitic ulcers are not met with so frequently, and the malignant ulcer is now frequently found grafted on a simple ulcer base. The erosions are mere bleeding abrasions of the epithelium from which alarming venous hemorrhage may occur. A medical friend asked me to come in great haste to

a house in the vicinity of my home. I found him standing at the bedside of a woman who was almost pulseless, bathed in blood from a stomach hemorrhage, from which she died while we were there. The post mortem examination showed an extensive erosion of the cardiac end of the stomach; some spots were shallow and some deep with eroded small and a few large bloodvessels which caused the patient's death. She was forty-two years of age, previous health good, except for some slight attacks of hematemesis which were treated medically with some success until the fatal hemorrhage.

The round ulcers of the acute and chronic form are hard to differentiate. Dyspeptic conditions and symptoms are often less marked in acute round ulcers than in the chronic round ulcers. The attack of the acute round ulcer is often sudden and the tendency is toward spontaneous healing. It may have as its symptoms hemorrhage and pain, but often pain alone is the symptom. The history is often that of a severe pain suddenly occurring in the stomach; that the taking of any kind of food or drink increases it so much that the patient is compelled to abstain for a time, and that the regulation of the diet with great care is compulsory, and finally the pain passes away. The absence of hemorrhage does not prove that ulcer is not present. On the other hand, we may have patients come to us complaining of quite a profuse hematemesis, with or without distress or pain, and this hemorrhage is their first knowledge of trouble. Chronic ulcer, on the other hand, is seen at a later period, and more time is given for the study of symptoms. Acute ulcer often lingers to become chronic. In chronic form of ulcer there is less acute pain and seldom hematemesis, in my experience at least, but there is almost persistent indigestion, sometimes malena, which I have more than once overlooked until my patient arrived at the hospital and the nurse called my attention to it. The vomitus in chronic ulcer may sometimes be streaked with blood, but large hemorrhages are extremely rare. Pulling upon adhesions produced by chronic ulcer frequently refers the pain to some other part of the body, for instance, the scapular region. Sometimes irritation of the ulcer itself will produce pain, but never so severe as in the acute type.

Perforation in chronic ulcer is rare, and where it does occur it is either the subacute or chronic type, producing perigastric or subphrenic abscess more often than immediate general peritonitis, as is the case in perforation produced by acute, round ulcer. A palpable mass can sometimes be made out in chronic ulcer simulating malignant disease, and dilatation of the stomach with food stasis, and regurgitation are common. In the diagnosis of gastric ulcer the clinical history must so far hold first place, laboratory methods second, and physical examination third. Persistent effort should be made to get the patient's history of a slight hematemesis having occurred at some remote period. The physical examination is only confirmatory of the clinical history, and the clinical test of the stomach contents might corroborate, to some extent, both the clinical history and the physical examination. A blood examination will show the chronic anemia which often exists. The presence of normal leucocytosis during digestion favors ulcer rather than carcinoma.

DIFFERENTIAL DIAGNOSIS.

It is almost impossible, at times, to distinguish duodenal from gastric ulcer. Pain, however, if there is pain, does not occur in duodenal ulcer until two or three hours after taking food. With an empty stomach the pain is usually increased. On the contrary, the pain is relieved by taking food—the so called "hunger pain" of duodenal ulcer of Mayo-Robson. The reason of this, it is supposed, is because the acid gastric secretion is neutralized before passing the pylorus; thus the irritation of the ulcer is prevented. Gastric ulcer often exists together with duodenal ulcer; in this case a positive diagnosis is almost impossible. Hematemesis is also rare; in duodenal ulcer malena is often present; the quantity of blood in the stools is, as a rule, scant; tenderness is near the right costal border and extends somewhat downward; jaundice is rare—its presence, however, is an indication that the papilla of Vater is invaded, or it may be due to accompanying duodenitis; perforation is more frequent than in gastric ulcer. Gastric ulcer must be differentiated from gastritis; in this the vomiting does not recur regularly after taking food; constant nausea is almost pathognomonic of this inflammatory condition. The tenderness here is diffuse, and not localized as in gastric ulcer. Absence of food with other appropriate treatment quickly relieves this inflammatory affection, as a rule, while in gastric ulcer often the symptoms persist, and, if temporarily relieved, will frequently recur.

Hemorrhage from the gastrointestinal tract due to other causes must be differentiated from gastric ulcer. A sudden rupture of varicose veins in the stomach without ulcer might give rise to a profuse hematemesis. An enterorrhagia from a walking case of typhoid fever might give rise to a suspicion of gastric ulcer. The surgeon must, therefore, be careful and, so far as he is able, get other symptoms than hemorrhage in gastric ulcer. A distinction between gastric ulcer and gastric carcinoma is frequently made, but with a thickened chronic ulcer with perigastric adhesions the diagnosis is not only difficult but important. Gallstone colic and cholecystitis, both chronic and acute appendicitis, as well as chronic and acute pancreatitis, must be thought of in the differentiation.

PROGNOSIS.

Prognosis in cases of ulcer of the stomach must be based largely on its treatment, and this may be considered under three headings: Those which cease untreated; those which are medically treated; and those which are surgically treated. The last division concerns us.

In regard to the surgical treatment of gastric ulcer, the pendulum has swung and is still swinging. The world's greatest surgeons have contributed to this all important question, now advocating, and again condemning various operations for gastric ulcer, many of them supporting their arguments pro and con by case records.

A gastroenterostomy is an anastomosis between the stomach and bowel. In this may be included the operation of pyloroplasty and Finney's modi-

fication of the same, known sometimes by the name gastropyloroduodenostomy, also Kocher's lateral gastroduodenostomy, and the many and various modifications of gastrojejunostomy. Doctor Deaver considers only two of these worthy of consideration: Finney's pyloroplasty and gastrojejunostomy. Pylorodiosis, or digital divulsion, he mentions only to condemn. He considers that the drawbacks to Finney's modified pyloroplasty overshadow by far the theoretical advantages of the operation. In the first place, the rate of mortality is higher than is that of gastrojejunostomy, even in Finney's own hands, the mortality being from six to eight per cent. Scar tissue and adhesions make the operation difficult and dangerous. Doctor Finney lays great stress on the importance of a most thorough separation of the adhesions and looks upon this as a requisite for success. Doctor Deaver thinks pyloroplasty is limited to cases without pyloric stenosis, with good motor power, and where perigastritis is absent or where the pylorus is not involved in cicatricial tissue. According to Doctor Deaver, therefore, there are very few cases where pyloroplasty is advisable, yet he thinks it might be of advantage in some cases where the pylorus was an obstructive factor without being ulcerated or the seat of cicatricial tissue. Doctor Deaver states that gastrojejunostomy has been proved by clinical experience, the true criterion of success, to fulfill most admirably the indications in the surgical treatment of gastric ulcer. The death rate in this operation, which is immediately due to the operation itself, is very low, varying from three to less than one per cent., while pyloroplasty has a mortality of six to eight per cent.

The main objection to gastrojejunostomy as applied to the cure of open ulcer, without marked pyloric stenosis, is that the foodstuffs are in many cases prone to pass out of the stomach still by the way of the diseased pylorus rather than to escape by the newly formed anastomotic opening at the greater curvature, thus permitting the development of a vicious circle. Because of this, it was suggested and was actually put into practice, that the pylorus when patent was ligatured, thus rendering the passage through the new opening easier for the stomach contents than it would be when the pylorus opposed no special barrier to their progress. Roux states, however, that the duodenal secretions on open gastric ulcers are curative; if this is true, it would not be necessary to occlude the pylorus. The treatment of gastric ulcer by excision, first thought of and put into practice by Rydygier, soon fell into disfavor because of its high mortality. It was of late revived and is now practised by many surgeons because it acts as a preventive of carcinomatous degeneration, also it is asserted that excision of the ulcer alone, or of the whole ulcer bearing area, prevents hemorrhage and perforation which sometimes occur even after gastrojejunostomy. The mortality is from five to ten per cent., and as gastric ulcers are frequently multiple, one or two may be removed, while others may be overlooked, and at operations, if several ulcers were discovered, they could not all be removed except by a partial gastrectomy. Elsberg, Mayo-Robson, and others have reported cases where after excision of ulcers fatal hemorrhages and perforations have occurred from ulcers which were left behind.

WHERE EXCISION COULD NOT BE DONE.

In this connection I wish to mention a case which was sent from the medical to the surgical side (St. Mary's Hospital) with the following history:

CASE II. About the second week of February the patient, a young Italian woman, aged twenty-eight years, and the mother of two children, with a previous history negative, swallowed a wineglassful of sulphuric acid by mistake. This caused an extreme burning sensation in the stomach, with intense pain and vomiting. She was immediately sent to a neighboring hospital, where she received lavage and egg albumen; she said she vomited blood immediately after taking the acid. Two weeks ago she vomited a great deal of blood. On arriving at St. Mary's Hospital, the medical side found the following conditions: Patient could not retain food, had constant pain in the epigastric region, with burning eructations of gas. On coming to the surgical side the woman was the picture of distress; emaciated, no food could be taken, even liquids causing intense pain in the stomach, together with vomiting. She begged that something might be done to relieve her.

Because of her exhausted condition a rapid incision was made over the stomach, under cocaine anesthesia. The pylorus was found indurated and thickened; even should time have allowed, a partial gastrectomy was not, in our judgment, justifiable; because of the unknown extent of the drainage the acid might have done to the stomach walls endogastric investigation was out of order; conservatism demanded that further operative interference should be relegated to another time, if at all. A rapid posterior gastrojejunostomy was done, which relieved her immediately. She remained well, and is now taking all the food she requires and is rapidly regaining her health and flesh.

It is an admitted fact that gastroenterostomy does cure gastric ulcer, and hence prevents the development of carcinoma. Take, as a type, the following case:

CASE III. Mrs. C., aged fifty years, Irish birth, mother of six children, ailing with stomach trouble for five years. For the last year all food and drink caused pain. No active bleeding at any time; some occult blood. December 7, 1911, a posterior gastrojejunostomy was done with suture for a partially cicatrized ulcer, low down in the pyloric end of the stomach. Relief was immediate and continued from date of operation until now. She increased in weight from ninety to one hundred and thirty-five pounds; she ate at the family table without any discomfort whatever. This operation we did at St. Mary's Hospital, Brooklyn. It is now over one year and I consider this ulcer cured by gastroenterostomy.

Excision without gastroenterostomy will frequently cure chronic gastric ulcer. Take, as a type, the following case, mentioned in the series of chronic ulcers excised and sutured. The ulcer was situated quite a distance from the pylorus and in the posterior wall of the stomach:

CASE IV. The patient was a married woman, aged forty-tl ree years, and the mother of a family. She was much emaciated, having been reduced, within a year and a half, from a stout woman to one weighing ninety-eight pounds. She had gone the rounds; all, including myself and a few of my colleagues in St. Catharine's Hospital, failed to make a diagnosis. In the borough of Manhattan a very distinguished internist and diagnostician ventured, after a most careful examination, a diagnosis of gallbladder disease. The patient was referred to us, bringing a note with the diagnosis of gallbladder disease and with instructions to operate for the same. My colleagues and myself excluded gallbladder trouble so far as signs and symptoms would inform us. We so informed the family physician and also notified him that we were unable to make a diagnosis. He justly praised the diagnostic ability of the gentleman mentioned

above and insisted on the gallbladder being explored, which was done and found healthy. The finger while in the exploratory opening was swept over in the region of the stomach because of the persistent vomiting which the patient had, when a small hard mass on the posterior wall of the stomach, about the size of a ten cent piece, was felt. The gallbladder incision was immediately closed and one made over the stomach, when the mass was found to be a chronic perforated ulcer adherent to the pancreas. This was separated, the indurated and raised edges of the ulcer were excised and closed with Pagenstecher silk in a round needle, the sutures being fortified with Lambert sutures, and a drain was introduced; gastroenterostomy was not done as is frequently recommended.

The patient recovered; the vomiting ceased, and she speedily gained in weight. She is now well and strong at this date. The operation was done about six years ago. No previous history of any value could be obtained from this patient.

Perforation of a gastric ulcer is without a doubt operative. If operation is not done, ninety-nine cases out of one hundred will die (Deaver). In the case mentioned above, Nature, with her plastic adhesions, was only staying the fatal end until surgery came to the rescue. Neglected perforative gastric ulcer usually means shock, peritonitis, subphrenic abscess, with other misfortunes, and finally death. The following is a type which bears out this statement:

Case V. Mr. Q., aged forty-eight years, referred to me by Doctor Gibbons, June 17, 1912, with a culminating stomach trouble. He took suddenly ill at Huntington, L. I., with epigastric pains. The physician diagnosticated perforated gastric ulcer and advised immediate operation, which advice brought the patient to the hospital the following day, twenty-eight hours from the onset. Patient was septic, prostrated, pulse 180, temperature subnormal, rapid shallow respiration. A median incision over the stomach permitted a large amount of milky fluid to escape from the peritoneal cavity; stomach wall covered with exudate. A perforation found on the anterior stomach wall was closed; despite free drainage the patient died in twenty-four hours from septic peritonitis.

Every surgeon is master of his own table and uses his best judgment in the selection of his operation, as well as the selection of his cases. The mortality in selected cases of gastric ulcer and its concomitants has been materially reduced, but in the routine work of large general hospitals the selection of cases is difficult when alleviation, or cure when possible, is paramount, consequently this reduction is not so noticeable. In chronic gastric ulcer, gastroenterostomy, fortified in most cases by excision and infolding of the ulcer, holds first place. In other cases the different operations mentioned will find a place.

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NEOSALVARSAN.

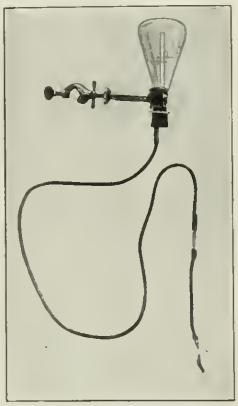
A New Simple Apparatus for Its Intravenous Use.

By O. L. Suggett, M. D.,
St. Louis.
Professor of Urology and Syphilology, College of Physicians and Surgeons and Barnes University.

The ease with which the new salvarsan (neosalvarsan) is prepared for use justifies a simple apparatus for its administration.

The apparatus I have designed renders its use as easy as the giving of a hypodermic. Transferring the solution from one vessel into another increases the liability of its contamination, beside necessitating the sterilization of more containers and making the entire outfit less compact and less portable. I have therefore merely inverted the Erlenmeyer flask, in which I mix the drug, and use it for its administration. Its use is briefly this:

Into a 200 c. c. Erlenmeyer flask, upon which you have scratched with a file a 100 c. c. mark, empty the ampoule of neosalvarsan, which, of course, has been opened with strict asepsis and with care not to splinter the glass. Add 100 c. c. of *freshly* distilled cold water; agitate gently until a perfect solution results; then insert a rubber stopper containing two small holes, into one of which a piece of glass tubing is inserted, which is sufficiently long to project above the surface of the solution when the flask is inverted, serves as an air vent. Into the other opening is inserted a short section of glass tubing, which is flush with the inner surface of the stopper, but projects externally sufficiently to attach a piece of rubber tubing some three feet in length, near the outer end of which is inserted a short section of glass tubing for the detection of air bubbles. The flask may be held by someone or it may be fastened into the clamp (see Fig.), which may be attached to the gas fixture, the head of a brass bed, or any other convenient place. For office and dispensary use I have fastened vertically to the wall an ordinary metal towel rack, which may be secured at any ten cent store, although the clamp is so designed that it may be placed at any angle and the apparatus brought into an upright position. Any good needle of sufficient lumen is plunged into the vein, the site of the puncture having been sterilized with absolute alcohol, and all air bubbles having been expelled, while the blood and the solution are both flowing, the two are coupled.



Treatment of Phlyctenular Conjunctivitis.—R. Sabouraud, in *Paris médical* for March 1, 1913, advises the use of the following collyrium in this affection:

℞ Cupri sulphatis, }
Potassii nitratis, }.....āā gr. i (0.06 gramme);
Aluminis, ... }
Camphoræ, ...gr. 1/20 (0.003 gramme);
Aquæ destillatæ, ...ʒiiiss (100 grammes).
M. ft. collyrium.

Prize Essays.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

CXXXIII.—How do you treat influenza, especially in view of sequelæ? (Closed April 15th.)

CXXXIV.—How do you treat muscular rheumatism? (Closed May 15th.)

CXXXV.—How do you treat burns? (Answers due not later than June 16th.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short, if practicable no one answer to contain more than six hundred words; and our friends are urged to write on one side of the paper only.*

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of $25 for the best essay submitted in answer to Question CXXXII has been awarded to Dr. James J. Walsh, of Scranton, Pa., whose article appeared on page 931.

PRIZE QUESTION CXXXII.

THE TREATMENT OF OBSTINATE CHRONIC BRONCHITIS IN THE MIDDLE AGED.

(Concluded from page 987.)

Dr. Nelson Du Val Brecht, of Angel Island, Cal., observes:

The therapy of this condition resolves itself into prophylactic and curative. The succession of attacks of this intractable malady may be frequently prevented by having the patient spend two or more years in continuous outdoor life, because an abundance of oxygen will disinfect the air tubes. To be effective the open air cure must comprise living in a tent and sleeping in the fresh air at night. For those who are unable to follow this régime, thorough ventilation of their dwellings and a window tent for use at night are to be recommended. For the wealthy, change of climate to a southern latitude is advisable, and Southern France, Southern California, and Florida have the best winter climates. The salient desirable characteristic of a climate for this class of patients is one in which it is comfortable for the greatest number of days per annum to remain in the open air without exposure to chill. Another valuable hygienic measure is the protection of the skin by the use of woollen underclothing, or buckskin over light flannel, worn throughout the entire autumn, winter, and spring months. Every endeavor should be made to prevent catching cold or becoming chilled. In wet weather rubber boots or overshoes should invariably be worn. A substantial, easily digested diet and daily movement of the bowels are necessary. Tobacco and alcohol should be interdicted. The former is a strong irritant to the entire respiratory system, and both of them, by causing an arteriosclerosis, are direct etiological factors in the production of bronchitis in many individuals. A moderate amount of exercise daily, but not to the point of fatigue, is to be advised. Walking and light calisthenics in the open air are the two best forms. The skin should be kept active by daily baths and rubbing.

Treatment of an attack of chronic bronchitis largely depends upon the cause and whether there are associated local or constitutional affections. In the so called gouty bronchitis, associated with sclerotic vessels and scanty, highly colored acid, or albuminous urine, the emunctories must be regulated, and Basham's mixture, fifteen c. c. in water, three times a day, after meals, or saturated solution of potassium iodide, one c. c. in a tumblerful of water, flavored with lemon juice, three times daily, are indicated. If there is an antecedent history of lues, and a positive Wassermann or Noguchi reaction is obtained, one or more injections of Ehrlich's salvarsan, 0.6 gramme as an average dose, or neosalvarsan in larger dose, and mercurials and iodides, are specific. When there is cardiac disease or enfeeblement, circulatory stimulants, as digitalis or strychnine, are indicated. In cases of fetid bronchitis a spray of phenol (from ten to twenty per cent. solution) or thymol (one part to a thousand parts) will make a valuable deodorizer.

The armamentarium of drugs recommended for internal use contains preparations of tar, creosote, terebene, terpin hydrate, ammonium chloride, senega, and balsams, such as sandal wood, copaiba, Peru, and tolu. The best external or tropical remedies are dry cupping or the application of counterirritants, as mustard plasters to the chest, camphorated oil, kerosene, and cataplasma of kaolin, U. S. P. Inhalations of the spray of wine of ipecac or compound tincture of benzoin, fifteen c. c. to a kettle of boiling water, are especially good for exacerbations. Stimulating expectorants are contraindicated. To aid expectoration and ease the cough which is frequently so annoying in the morning when the patient first wakens from sleep, hot drinks, as a cup of coffee, tea, or milk, are useful. When dyspnea and cyanosis become marked, venesection is the most effective single remedial measure. Sometimes if the patient is allowed to hang his head over the side of the bed when he coughs, the expulsion of the secretion is facilitated.

Dr. N. D. Graham, of Washington, D. C., gives his views as follows:

A radical change in the habits of the individual is essential to the successful treatment of obstinate chronic bronchitis in the middle aged.

Irritation of the bronchial mucous membrane usually is as clear an indication of disturbed metabolism as are cutaneous signs like urticaria or chloasma. Measles presents an acute condition in which bronchial and cutaneous irritations arise simultaneously from a common internal cause, e. g., from an intoxication. The sources of the toxines in chronic bronchitis are most commonly—

1. Constipation and intestinal indigestion.
2. Gouty or rheumatic diatheses with insufficient elimination by the kidneys.

3. Infections which may not invade the bronchial mucous membrane directly or primarily.

In the first two classes the hygienic management is most important. The amount of protein (animal) food should be radically reduced generally to one third the original amount.

The corresponding increase in the fat and vegetable content of the diet should be gradual and governed by the digestive ability. Butter, cream, and olive oil are the best fats, while the patient's appetite may dictate its choice of the fresh, ripe, and seasonable vegetables.

The amount of water must be increased both internally and externally. A minimum of two quarts of fluid should be taken daily, but stimulating drinks are to be avoided. Generally speaking, the patient should eat less and exercise more. Walking is probably the best exercise on account of the ease with which it may be prescribed and regulated. Guard against great fatigue, and see that the nasal passages are unobstructed and that clean, pure air is breathed through them, not through the mouth. In the greatly debilitated, general massage may be substituted with benefit. Daily hot baths in which the temperature is lowered to 80° F. at the end are useful. Dry the skin by vigorous rubbing with a coarse towel. Constipation should be overcorrected by the daily use of a saline water taken hot before breakfast.

On account of the nonstimulating diet a digestive atony is often manifest. A useful preparation is:

℞ Dilute nitrohydrochloric acid, ...16 c. c.;
Tincture of nux vomica, ...24 c. c.;
Essence of pepsin, ...60 c. c.
Sig.: One teaspoonful in water after meals.

If the toxine is the result of an infection, a stimulating diet is indicated. In these cases the invading organism should be identified if possible, and vaccine therapy employed. Either stock or autogenous vaccines may be used. If the lungs are the seat of the infective process, it is usual to clean the mouth by repeated washings with a mild antiseptic solution, and make the vaccine from the predominating organism or organisms found in the bronchial secretions.

In cases where the secretion is scanty, iodine is a useful drug with which to attack the bronchitis directly, on account of its ability to liquefy secretions and purge the lymphatics. One may use either the iodides or the syrup of hydriodic acid.

In all cases bronchial sedatives are permissible when relief from cough is necessary to obtain rest for mind or body. Codeine in effective doses gives satisfaction.

Investigation in each case will lead to its specific treatment, for the important thing to remember is that the bronchitis is a symptom rather than a disease, or, in other words, bronchitis does not become chronic unless the resistance of the patient is lowered, and the medical man should seek to remove all possible causes for this lack of resistance.

Dr. Richard Leiman, of Detroit, Mich., says:

The end in view is to dry the secretion, modify the secreting parts, remove the cause, and return the parts to as normal a condition as possible. I first make the necessary corrections of diet and habits; if possible, remove the patient from the action of injurious influences. If he cannot go to a suitable climate in cold weather I advise him to stay in his room in all unpleasant weather, but at other times he is permitted to stay in the open air. He should avoid as much as possible all the harmful influences which his calling and manner of life entail. Food is given sparingly to those inclined to corpulence, and it should be nourishing and easily digested. Alcohol should be taken in limited quantity, if at all. Constipation when present is combated by taking fruit, especially grapes, prunes, etc., honey, graham bread, and the bitter waters. The digestion must be regulated, with special attention to the prevention of flatulency, a most distressing condition to the patient.

I advise moderate exercise regularly, but the patient should avoid overexertion, such as climbing stairs or hills quickly. All the habits and diet are brought to as near a degree of perfection as it is possible.

As to medication, inhalations are sometimes very advantageous—simple steam or a one per cent. or two per cent. solution of common salt or sodium bicarbonate. Creosote or oil of turpentine is sometimes used with good results. One method very satisfactory to me is a bottle fitted with a cork having two holes, through which are passed two glass tubes open at both ends, one going to the bottom of the bottle, the other just through the cork. The latter is turned at a right angle, and a rubber tube fitted with a mouth piece is fastened to this. Fill the bottle about one third full of water, on which is floated a drachm or so of oil of turpentine. This is set in hot water, and the patient smokes his pipe with some degree of comfort. Creosote, benzoin, eucalyptus, and wine of ipecac are tried in the order named should the oil of turpentine not prove beneficial; sometimes the Robinson inhaler, with the sponge moistened with a mixture of equal parts of alcohol, chloroform, and beechwood creosote, give more relief and seem more suitable to some patients. The apparatus should be worn as much as possible.

Sweat baths and electric incandescent light baths do good service in some cases, and are well worth trying. Large amounts of warm drinks are prescribed. Sodium iodide or potassium iodide, in five grain doses, is used when the secretion is tough and hard to expel. For expectorants, apomorphine has given good results in doses of one thirtieth or one fortieth of a grain, every four hours. For a very distressing cough I give a Dover's powder and one eight or one twentieth grain of heroin. Oil of turpentine, in five or ten drop doses, given in an emulsion in milk, three or four times a day, is useful. Terpin hydrate, in one or two grain doses, is more effectual in some, and, like creosote carbonate, is more tolerable to some. When a bitter tonic is indicated I give the following:

℞ Creosote, ...ʒii;
Tincture of nux vomica, ...ʒss;
Compound tincture of gentian, q. s. ad.....ʒiv.
M. Sig.: One teaspoonful.

I usually give the syrup of ferric iodide some time during the course of treatment. Local applications to the chest, in the form of embrocations, mustard

plasters, dry cups, or cool or warm wet compresses, are used when there is severe dyspnea, pain, or a feeling of oppression in the chest.

In all secondary chronic cases our chief attention, beyond the symptomatic treatment of the bronchitis, must be directed to the treatment of the underlying disease. If we succeed in once more regulating the heart's action by digitalis, caffeine, or cactus, when there is an uncompensated heart, in establishing diuresis when there is renal disease, or in improving the general physical condition by proper dietetic measures in the corpulent, gouty, alcoholic, etc., we may also in that way cause improvement in the existing bronchial catarrh.

Dr. P. A. Smithe, of Enid, Okla., states:

Prophylaxis.—As in the majority of cases chronic bronchitis is secondary either to some other disease, as influenza, vasomotor cold, cardiac or renal degeneration, or else is an indirect result of general impairment of constitutional resistance, preventive treatment is largely concerned with intelligent management of many commonly met conditions. The ordinary catarrhal or vasomotor cold should have more attention paid to it both by the general practitioner and his patient, who should be warned against the common practice of shutting one's self up in an overheated, underventilated room with a bottle of cough syrup. Good ventilation, thorough elimination, simple hydrotherapy, and a moderate amount of outdoor exercise should be insisted upon, and less dependence be placed on treatment that can be symptomatic merely, not curative. Influenza proper also comes under this head, with the further caution that the profound depression sometimes caused by this infection requires watching. It is best combated by a nourishing, easily assimilated diet during convalescence, outdoor air, an occasional purge of fractional doses of calomel followed by a saline, and, when the patient's pocketbook permits it, a trip to the seashore or an ocean voyage. Renal, cardiac, and arteriosclerotic conditions should be early recognized and properly managed, but too often the bronchitis seems to be determined by the fact that the bronchial mucosa is a *locus minoris resistantiæ*, and the bronchitis exists when we first see our patient, having developed coincidentally. To sum up the matter of prophylaxis, more attention should be paid to open air treatment, and hydrotherapy should be used more than so called tonics internally in the convalescence from acute disease.

Treatment of the fully developed case is hygienic and medicinal, with the emphasis on the former. If the case is curable at all it is more apt to be cured by building up the general system than by drug therapy. If the patient, as often happens, has formed the habit of remaining indoors at the first attack in the early part of winter, and staying there like a hibernating animal, the thing he is most apt to need is proper ventilation, with warmed air. This may be done by raising the windows and putting a board of the proper length underneath, allowing the air to enter between the upper and lower sashes, or the upper sash may be lowered; but the modern combination of heating with forced ventilation is preferable, although unfortunately out of reach of the poor. Remember that cold air is apt to irritate, especially when the cold is not a steady cold. A quick hot tub bath, followed by a brisk towel rub, should be given daily when the patient is robust, or, after his strength has improved, douching the spine with cold water. The diet should be as nourishing as the patient can assimilate. My preference is for eggnog, milk, custards, steak, and fruit. A daily bowel movement is best secured by drinking two or three glasses of water before breakfast, and then sitting on the toilet and making expulsive efforts at a certain definite time each morning, preferably just after breakfast, whether the bowels feel like moving or not. This may be reinforced by from ten to fifteen minim doses of fluid extract of cascara sagrada (bitter), in capsule, before each meal. When the patient is not suffering from an exascerbation of the condition, it is best to have him spend from a few minutes to an hour a day out of doors, sitting on a sunny porch, riding, or walking, according to his strength. Under this head comes the benefit obtained from simple change of climate. Sea voyages are sometimes efficient. A change from a great altitude to a lower one, or *vice versa*, sometimes cures. Remember that a case with emphysema is usually made worse by great altitude; likewise those with cardiac involvement. Patients with scant secretion usually do better in a moist, warm climate; those with abundant secretion may receive more benefit in a warm, dry climate, e. g., Southern California. Dust should be particularly avoided.

Drug treatment may be symptomatic to relieve certain troublesome symptoms, or even in some cases curative. The cough should not be treated unless it is severe enough to interfere with the patient's rest. Codeine, one fourth grain, or heroin, one twelfth grain, given hypodermically, is best if an opiate is necessary, but it is advisable not to resort to opiates until it is plain that an opiate is positively required. Patients with tenacious secretion, mucoid in character, are most apt to be benefited by ammonium chloride in twenty grain doses, every three hours, until secretion is fully established, when it should be discontinued. It interferes with the stomach less when given as an inhalation of the nascent vapor from an inhaler made up of three bottles connected by glass and rubber tubing passing through perforated corks. In the first bottle is placed hydrochloric acid, in the second a mixture of ammonia and water, while the third contains wash water and a little acetic acid, added to remove any excess of ammonia, which is very irritating. The patient inhales the freshly formed vapor through a tube, being warned to replenish the acetic acid in the wash water occasionally. In this class of cases with tenacious secretion, also in those cases with dry irritating cough and very little secretion, I use potassium iodide in ten grain doses, given in water or milk, three times daily, after meals. In the emphysematous and asthmatic type of cases, I sometimes substitute for this syrup of hydriodic acid one half drachm, three times daily, in water, before meals. When the secretion is very free, and especially when it has a foul odor, I use five grain doses of terpin hydrate, in capsule, every three or four hours.

There are two local applications which deserve

special mention and are of great use when congestion of the bronchial mucosa is severe, as shown by increase in the number of râles, shortness of breath, or cyanosis. They are the old fashioned mustard paste, and the Priessnitz cross bandage. The paste is made by mixing ground mustard with three times its volume of flour in cold water, and adding a little vinegar and white of egg. The paste is spread on a piece of cotton cloth and covered with surgical gauze or cheese cloth. This may be applied both on the chest and over the lungs posteriorly, for half an hour to an hour, and repeated, greasing the skin with a little sweet oil meantime. The Priessnitz bandage is made from a piece of surgical gauze or cheese cloth, eight feet long and two feet wide, so that when it is folded three ply it is about eight inches wide. It is wrung out of water at the temperature of the room and wrapped about the chest, starting at the left axilla, then passing diagonally over the right shoulder and across the back to the left axilla, then across the chest to the right axilla, thence up to the left shoulder, and again reversed and passed again over the chest, as far as it will reach. This is covered with a strip of dry flannel, which may or may not be covered with oiled silk. All is then to be made fast with safety pins. These applications will produce increased circulation in the vessels and probably reflexly lessen the deeper congestion.

To sum up, beware of shotgun cough mixtures, attend well to the general health and hygienic measures, and individualize with your drug treatment.

Therapeutic Notes.

Treatment of Dhobie Itch.—C. L. Overlander, discussing, in the *Journal of the American Medical Association* for March 15, 1913, various diseases prevalent in the Canal Zone, refers to the condition known as dhobie itch, characterized by a scaling eruption, sharply defined, and with brownish pigmentation, appearing on the trunk, in the axillæ, and in the groins, but sometimes spreading over the entire body and extremities. The condition is believed to be due to the *Microsporon minutissimum*, and is transmitted by contact, like ringworm. The following ointment is recommended for this disease, as well as other conditions associated with pronounced itching:

℞ Acidi salicylici, ...
Hydrargyri ammoniati, } āā gr. xx (1.3 grammes);
Bismuthi subnitratis,
Olei eucalypti, ... } .....āā ʒi (4 grammes);
Adipis lanæ hydrosi, ...℥i (30 grammes).
M. ft. unguentum.

Treatment of Warts.—H. Löb is stated, in *Semaine médicale* for February 12, 1913, to have used salvarsan and neosalvarsan in the treatment of warts. Arsenic was already known to be an efficient remedy in some cases, and the author was therefore led to try the effect of the new arsenicals in these cases. In the first patient, a young woman with multiple warts on the hands and face, an injection of 0.26 gramme (0.005 for each kilogramme of body weight) of salvarsan was given in the buttock. Six days later the warts were clearly undergoing resolution, and in less than three weeks all had disappeared. Two years and a half later no recurrence had taken place, and there were no spots or scarring at the former site of the lesions. In the second patient, a boy with numerous warts on the face, of three or four months' standing, a single intravenous injection of neosalvarsan similarly led to complete disappearance of the warts within ten days. In a third case, an intravenous injection of 0.45 gramme of salvarsan was attended with a less favorable result, the warts recurring after undergoing partial retrogression. In this patient, however, the condition was already of fifteen months' standing. Because of the fact that this patient was predisposed to urticaria, it was not deemed advisable to try another injection.

Treatment of Valvular Heart Disease.—Sir William Whitla, in the recently issued fifth edition of his *Dictionary of Treatment*, recommends the following combination for chronic valvular disease accompanied by anemia:

℞ Tincturæ digitalis, ...
Tincturæ ferri chloridi, } .....āā ʒiii (12 c. c.);
Acidi phosphorici diluti, ...ʒii (8 c. c.);
Aquæ chloroformi, q. s. ad.....℥viii (240 c. c.)
Fiat mistura.
Sig.: Two teaspoonfuls in a half glassful of water four times daily.

In failing compensation another good mixture is as follows:

℞ Tincturæ digitalis, ...
Tincturæ nucis vomicæ, } .....āā ℥ss (15 c. c.);
Spiritus ammoniæ aromatici, ...ʒiss (45 c. c.);
Aquæ chloroformi, q. s .ad.....℥xii (360 c. c.).
Fiat mistura.
Sig.: One tablespoonful in a quarter glassful of water three times daily after meals.

Treament of Trypanosomiasis and Yaws.—H. S. Ranken, in the *Proceedings of the Royal Society* for March 6, 1913, reports results obtained in these diseases by the injection of suspensions of precipitated metallic antimony, and concludes that, given in this form, antimony is a safe and efficient remedy for sleeping sickness. Over 1,400 intravenous injections of the drug were given. The dose to be administered, usually one grain, was stirred in a glass mortar with half an ounce of normal saline solution to form a suspension and given as in ordinary saline infusion, with a funnel, tube, and large needle. Saline solution was run in before and after the antimony suspension, to the total amount of about six ounces. In selected cases one and one half or even two grains could probably be safely given, but several cases of extreme susceptibility were met with, and the initial dose should be one grain. The usual course of treatment was five doses at intervals of four days, followed, after an interval of six weeks, by three doses extending over nine days. Of thirty-five patients treated with antimony alone, twenty-four were improved and remained negative to all microscopical examinations for parasites. Of the remainder, four died, two from overdoses of antimony, one from bronchopneumonia, and one from an epileptiform attack; trypanosomes reappeared in four patients; one relapsed clinically and two deserted. Thirty-one other patients were treated with alternate courses of an-

timony and atoxyl, and all did well. Short courses of antimony were also given to 143 patients previously treated with atoxyl, 813 injections being administered altogether. The striking effect of antimony on the trypanosomes was illustrated in the facts that in blood slides made before injections were completed some of the parasites were already very obviously affected, and that numerous preparations made twenty minutes after injections invariably showed complete absence of parasites.

Of ten patients with yaws to whom metallic antimony was given, none manifested the excessive susceptibility witnessed in sleeping sickness. In an adult of fair condition one grain should be given as a first dose, and doses of one and one half or two grains repeated twice at intervals of four days. The treatment proved uniformly successful in the author's cases. In forty-eight hours after the first dose distinct improvement was seen, and in all except one very severe case, the lesions were entirely healed in ten to fourteen days.

Treatment of Paroxysmal Tachycardia.—C. Esmein, in *Journal médical français* for February, 1913, after reviewing newly discovered facts concerning the nature and etiology of this affection, enumerates, after Vaquez, the following measures to be instituted for overcoming the paroxysms:

1. Lying on his back, the patient should execute very slow inspiratory movements, keeping the chest well filled with air during the intervals. 2. He should drink water or some other fluid, executing energetic swallowing movements. 3. Every ten minutes he should take a cachet containing 0.15 gramme (2½ grains) of pituitary gland substance. 4. Mild compression of the right pneumogastric nerve in the neck. 5. Tickling of the pharynx with a feather. 6. If the condition is not relieved in twenty-four hours, the patient should be given two dessertspoonfuls of syrup of ipecac at a ten minute interval. 7. If the tachycardia should happen to persist longer than three or four days, and signs of marked cardiac insufficiency appear an intramuscular injection of 0.5 milligramme (1/128 grain) of amorphous strophanthin should be given, on the next day, one milligramme (1/64 grain) by the same route, and on the third day, if necessary, an intravenous injection of one milligramme.

The efficacy of the first five measures mentioned depends in part upon the promptness with which they are employed, and also varies in different cases. The whole series should be tried, even if the first few do not prove successful.

Treatment of Diabetes Mellitus.—E. Liotard, in *Journal de Médecine de Paris* for April 5, 1913, is credited with the following emulsion, to be used in the treatment of diabetes accompanied by marked loss of weight:

℞ Olei morrhuæ, ...ʒx (300 grammes);
Glycerini, ...℥iv (120 grammes);
Aquæ aurantii florum, ...ʒiiss (80 grammes);
Tragacanthæ pulveris, ...ʒss (2 grammes);
Acaciæ pulveris, ... } ..āā gr. lxxv (5 grammes);
Calcii hypophosphitis, }
Sodii hypophosphitis, }
Pancreatini, ...ʒi (4 grammes).
M. ft. emulsum.
Sig.: One tablespoonful three times a day.

Treatment of Palmar and Plantar Hyperidrosis.—Fouquet, in *Monde médical* for December 5, 1912, is credited with the following formulæ for these conditions:

I.

℞ Quininæ sulphatis ,.....gr. lxxv (5 grammes);
Alcoholis diluti, ...Oi (500 c. c.).
Misce.

II.

℞ Sodii boratis, .. } .....āā gr. lxxv (5 grammes);
Sodii salicylatis, }
Aquæ, ...Oii (1000 c. c.).
Misce.

For sweating of the hands glycerites are particularly suitable:

III.

℞ Acidi tannici, ...gr. lxxv-cl (5-10 grammes);
Glyceriti amyli, ...ʒiss (50 grammes).
Misce.

Or,

IV.

℞ Acidi tartarici, } .....āā gr. xv (1 gramme);
Acidi salicylici, }
Glyceriti amyli, ...ʒi (30 grammes).
Misce.

Formaldehyde preparations may also be used:

V.

℞ Liquoris formaldehydi, ...ʒi (4 grammes);
Spiritus camphoræ, ...ʒx (250 grammes).
Misce.

Or,

VI.

℞ Tincturæ benzoini, ...ʒiii (10 grammes);
Liquoris formaldehydi, ...ʒss (15 grammes);
Aquæ, ...Oii (1000 c. c.).
Misce.

The following combination may also be prescribed:

VII.

℞ Acidi borici, ...gr. lxxv (5 grammes);
Sodii boratis, . } .....āā ʒss (15 grammes);
Acidi salicylici, }
Glycerini, ... } .....āā ℥ii (60 grammes).
Alcoholis diluti, }
Misce.

After the use of either of the above mentioned lotions, some form of powder should be dusted over the parts. Powders containing fermentible vegetable matter should be eschewed. The following are suitable:

VIII.

℞ Zinci oxidi, ...ʒii (60 grammes);
Talci, ... } .....āā ʒv (20 grammes);
Magnesii carbonatis, }
Camphoræ, ...gr. xv (1 gramme).
Fiat pulvis.

IX.

℞ Acidi tartarici, ...gr. xlv (3 grammes);
Zinci oxidi, ...ʒiiss (10 grammes);
Talci, ...ʒii (60 grammes).
Fiat pulvis.

X.

℞ Acidi salicylici, ...ʒss (2 grammes);
Resorcinolis, ...ʒiiss (10 grammes);
Amyli, ...ʒiss (50 grammes);
Talci, ...ʒiii (100 grammes).
Fiat pulvis.

XI.

℞ Sodii salicylatis, ...ʒss (2 grammes);
Potassii permanganatis, ...ʒiii (12 grammes);
Bismuthi subnitratis, ...ʒiss (45 grammes);
Talci, ...ʒx (40 grammes).
Fiat pulvis.

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PHYSICIANS AND THE TENEMENT HOUSE DEPARTMENT.

Next to the health department itself, no other city department in New York is so intimately and vitally connected with the preservation of the public health as the tenement house department. It is the duty of every intelligent physician and every good citizen to sufficiently familiarize himself with the wise provisions of our present excellent law, to support the tenement house commissioner in his vigilant administration, and to aid him in resisting the encroachments and attacks which are periodically made in the interest of greedy speculators and specious sham reforms.

For two years there has been a steady campaign of misrepresentation to promote a fantastic project, as inconsistent with sound principles of architecture and building as it is revolting to common sense and decency. We refer to a measure to legalize waterclosets opening on tenement house stairs, which was killed in committee at Albany last year. Its originators, with the fanatic zeal and eccentric vanity so often recognized as pathological by physicians, introduced their queer bill in the legislature again this year, and made it even worse by tacking on a proposal to diminish the present legal minimum of cubic air space in tenement bedrooms, by permitting rooms to be built only six feet wide. The present limit is seven feet, and affords none too much protection for the tenement dweller. With perhaps conscious humor the cities committee appropriately selected the first day of April as the date for a hearing on this extraordinary measure.

Reputable architects, sanitary engineers, prominent builders, social workers in the tenements, the City and Suburban Homes Company, the East River Homes Foundation, the tenement house committee of the Charity Organization Society, and Mr. Murphy, the present able tenement house commissioner, are all opposed to these pernicious proposals, designed to break down the safeguards of our slowly developed tenement house legislation. The exploiters of the six foot bedroom idea and the waterclosets opening on the stairs are also endeavoring to manufacture sentiment in favor of a board of appeal to reverse and override the tenement house commissioner's decision. There is no possible excuse for such a board, which would only saddle a needless expense upon the taxpayers and would reduce the office of tenement house commissioner to a mere figurehead without any real authority. Such a post only a man of mediocre ability and wanting in self respect could be induced to accept. It would be quite as reasonable to create a board of appeal to pass on rulings of the health department.

It is unfortunate that some two years ago the Academy of Medicine, as was explained by Dr. Abraham Jacobi in a recent statement, was induced to endorse the building of open waterclosets, which gives some color to the statement that the academy favors such closets on public stairways in tenement houses. An effort has been made for the rescinding of this resolution, which, it is felt, was promoted only too successfully in an attempt to use the academy for personal and commercial ends. We do not believe that its members or physicians generally are in favor of open waterclosets on either open or closed stairways, six foot tenement bedrooms, or a board of appeal for the tenement house department.

FRIEDMANN'S ALLEGED CURE FOR TUBERCULOSIS.

Dr. J. F. Anderson, speaking on behalf of the United States Public Health Service, adequately answered the criticism of the president of the National Association for the Study and Prevention of Tuberculosis (Mr. Homer Folks) that the medical profession, to which the public looked for authoritative guidance, had failed so far to furnish clear information as to the actual therapeutic value

of Friedmann's alleged cure. While emphasizing the facts that the results so far observed had not justified the confidence in it that widespread publicity had inspired, and that the profession and the public should continue unabated the well tried agencies for the treatment and prophylaxis of the disease, Doctor Anderson counsels the postponement of a final verdict until reliable and unbiased pronouncements supported by convincing data shall have been vouchsafed.

Were we even to disregard the degrading commercialism which has surrounded Doctor Friedmann's whole demeanor since his name has been brought into publicity, it will take considerable time, at least two years, to determine the actual value of the treatment. Not alone may the numberless "cures" now buried in oblivion be evoked in support of this assertion, but the history of tuberculosis itself includes examples of the harm that undue haste may entail, while proving actually destructive to the remedy itself. We had a tacit example of this kind, as is well known, in the early history of tuberculin, but two decades ago. Koch had advised the use of what he had termed "original tuberculin" (O. T.) on theoretical lines which he eventually abandoned. Notwithstanding the caution he urged, this tuberculin was administered recklessly and repeatedly at all stages of the disease, regardless of the reaction produced; the result being, in a large number of instances, acceleration of the morbid process and untimely death. The storm of indignation awakened by Guttmann, Ehrlich, Virchow, and others, fortunately arrested this holocaust of far advanced consumptives, but tuberculin itself received a blow from which it only began to recover ten years later. While the experience gained has served a good purpose, and though none of the clinical errors, such as the use of the remedy in advanced cases regardless of reactions, made at the time, are likely to recur, the fact remains that haste in reaching a definite estimate of Friedmann's product may prove harmful in other directions. Especially does prudence impose itself in view of the facts that the mode of preparation of the remedy is not divulged and that a speculative spirit seems to be the mainspring of the whole scheme.

President Folks's inference that the effective press agents of Doctor Friedmann are rendering the task of obtaining funds from municipal and State authorities to sustain tuberculosis dispensaries, sanatoria, and hospitals increasingly difficult may, however, demand a tentative forecast. What landmarks are now available afford very little if any hope that, at best, Friedmann's alleged remedy will ever accomplish what is now, and has long been, accomplished by means of tuberculins, which do not, moreover, present the ever disquieting drawback of containing living tubercle bacilli, as does Friedmann's preparation. State and municipal authorities should take no heed of the latter until told by responsible and disinterested experts of the type afforded by our Public Health Service whether or not it possesses any *bona fide* therapeutic value over and above available resources. To withhold any benefit whatsoever from our sufferers on the plea that this alleged "remedy" *might* prove to be a specific would be little short of a crime.

SPRING CLEAN UP.

"Clean up" movements have become an established feature of sanitary work in this country. At first sight the relation of such "clean ups" to public health appears remote, but a little consideration shows that this is not by any means the case. In a number of preventable diseases, in fact, the relation can be shown to be remarkably direct. To cite only a few examples, it is now well established that a large part of the infant mortality in large cities is caused by gastroenteric diseases, and these are largely questions of bad food, bad air, and unclean surroundings. The rôle of flies in the production of typhoid fever, of mosquitoes in that of malaria and yellow fever, of fleas and rats in that of plague, and of lice in that of typhus fever, are all so well known that the direct relation of dirt and filth to these diseases will not be questioned. But such "clean up" movements undoubtedly exert a large educational influence on the general public, and thus accomplish an incalculable amount of good. We are glad to see, therefore, that Mayor Blankenburg has urged successfully a general clean up of Philadelphia, while Commissioner Lederle has inaugurated a strong movement to clean up the city of New York, a task of no small magnitude. All the important civic associations in the latter city have agreed to cooperate, as have also the various city departments. The actual removal of the dirt and rubbish collected will be undertaken by the department of street cleaning. From a preliminary survey made last month it was found that the amount of rubbish varied from one load for every thirty buildings, in the better residential section, to one load for every eight buildings in certain sections of the Bronx. The total estimated cost of removing and properly disposing of all the rubbish is almost $40,000, and the Board of Estimate has been asked to make provision for this outlay. The work contemplated is so important to the

community that it is to be hoped everything will be done to carry it to a successful conclusion.

HOSPITAL AND DISPENSARY TREATMENT OF VENEREAL DISEASES.

We are publishing in to-day's issue a symposium on hospital and dispensary treatment of venereal diseases, arranged by the Public Health, Hospital, and Budget Committee of the New York Academy of Medicine, a subject which because of its far reaching social importance requires the serious attention and consideration of the medical profession, as well as of the community at large. There is a lamentable lack of appreciation on the part of our hospitals of the need of provision for ward treatment of syphilis, and there is a great need for the improvement of the majority of our venereal disease outpatient clinics.

The matter was taken up actively by the Public Health, Hospital, and Budget Committee after the budget hearings last fall, when the Department of Health asked for an appropriation to establish a venereal disease clinic where modern treatment would be administered, and which, it was stated, was almost entirely nonexistent in private and municipal dispensaries of this city. The Public Health Committee of the Academy of Medicine objected to the granting of money for this purpose until it had been proved that the existing facilities could not be made adequate to meet the needs of the city. The money was not appropriated, and the committee assumed the responsibility of bringing this most important matter to the attention of the medical profession.

The Associated Outpatient Clinics of the City of New York, an organization which was brought into existence by the efforts of the Public Health Committee of the Academy, undertook a study of the existing dispensary practices with regard to the treatment of these diseases, and called a conference of the attending dispensary dermatologists, syphilographers, and genitourinary surgeons to formulate a plan by which the clinics could be made most efficient. A set of recommendations relating to the treatment of syphilis has already been prepared and adopted by the association. Recommendations bearing on adequate facilities for treating gonorrhea and chancroid are now under consideration by the association.

The movement has received proper impetus, and it is hoped that before long the genitourinary, skin, and syphilitic clinics of our dispensaries and outpatient departments of hospitals will be put on a very high level of efficiency, and that the necessity of a Department of Health clinic will be entirely obviated.

STUDIES IN BERIBERI.

The medical profession of our oriental possession, the Philippine Islands, have devoted much time and labor to the solution of questions referring to tropical diseases. Among these, beriberi unquestionably finds an important place. Since the founding of the *Philippine Journal of Science*, about seven years ago, our confrères stationed in our Asiatic possession have been provided with an excellent medium for the publication of their scientific conclusions.

The present issue of the Philippine *Journal* contains a study of polyneuritis gallinarum. Doctor Vedder and Doctor Clark, from their observations, have reached the conclusion that the symptomatology and pathology of polyneuritis gallinarum could not be regarded as identical with that of beriberi. They have never observed any edema in fowls at all comparable to wet beriberi in man, and while there are undoubtedly slight changes in the heart of fowls suffering from polyneuritis, there is none of the hypertrophy which is such a characteristic finding in human beriberi. In spite of these facts, however, there is more similarity than difference between the two diseases.

It has been demonstrated that chemical changes take place in the brains of fowls suffering from polyneuritis gallinarum. It appears, therefore, that the disease is not simply a peripheral neuritis as has been generally supposed. On the contrary the entire nervous system is affected. The symptoms of the disease are not chiefly referable to degeneration of the peripheral nerves, since the degeneration occurs before symptoms arise. Moreover, while advanced degeneration may be present and be accompanied by no symptoms at all, degeneration of the nerves may remain after recovery has occurred.

SALVARSAN IN THE TREATMENT OF GANGOSA AND FRAMBESIA.

The present issue of the *United States Naval Bulletin* contains, among other interesting articles, one from the pen of Dr. William M. Kerr on gangosa. The pathology of this disease has never been carefully investigated, as it is not fatal. The gross lesions are destructive ulcerations of the nasopharynx, of the skin and underlying connective tissue, and gummalike lesions of the bone. All these lesions may occur separately, or all three may be found in the same patient.

The patients found at Guam were ordinarily treated with iodine mixture, but since the introduction of salvarsan this product has been given a trial, and it seems that if employed in the early stages, it will prevent extensive destruction of tissue. It should, however, be supplemented by a prolonged course of mixed treatment. From this antisyphilitic treatment it was concluded that the spirochetes might possibly be found in the lesions, but long and careful search failed to reveal the presence of treponemata of any description. Out of one hundred cases, eighty-two gave a positive Wassermann reaction, and fifteen were negative, while with the Noguchi modification a large majority gave a positive reaction. Further investigations show that

out of 1,895 normal natives, over ten years of age, seventy-four per cent. had contracted frambesia generally during childhood, while out of 315 patients with gangosa, eighty-three per cent. gave a history of gangosa.

In the same issue of the *Bulletin,* we find a report of Dr. E. W. Reed on the treatment of frambesia with salvarsan, giving excellent results. This observer reports from Samoa, and makes the statement that no syphilis has ever been reported in American Samoa, but still in eighty-three cases of frambesia, seventy-seven showed *Treponema pertenue.*

These two reports indorse the observations from other parts of the globe with salvarsan, which seems to have a beneficial influence in certain tropical diseases.

Obituary.

LOUIS ADOLPHUS DUHRING, M. D.,

of Philadelphia.

Doctor Duhring died in Philadelphia on May 8th. Born in Philadelphia on December 23, 1845, he graduated from the medical department of the University of Pennsylvania in 1867, studied dermatology for two years in the hospitals of Paris, London, and Vienna, and, returning to Philadelphia, he opened there, in 1870, a dispensary for skin diseases of which he was for ten years physician, acting as consulting physician since 1880. In 1871 he joined the faculty of the University of Pennsylvania, and since 1876 had held the professorship of skin diseases. Doctor Duhring was a widely recognized authority on skin disease, and dermatitis herpetiformis is known also as Duhring's disease. He wrote and published many books dealing with his specialty which have had a wide circulation in America as well as abroad. He was an honorary and corresponding member of many dermatological societies and was one of the founders of the American Dermatological Association.

News Items.

Changes of Address.—Dr. M. L. Wager, to Marvelle Court, 1879 Fulton Avenue, the Bronx, New York.

Classes in Practical Hygiene in a Philadelphia Hospital.—The Orthopedic Hospital, Philadelphia, now has classes in which patients with spinal curvature or nervous diseases are taught the principles of hygienic living, such as, bathing, fresh air, exercise, etc.

Dorchester, Mass., Medical Society.—At the annual meeting of this society, held on the evening of May 1st, the following officers were elected: President, Dr. Edward J. Brearton; vice-president, Dr. F. X. Corr; secretary and treasurer, Dr. J. T. Kendricken; advisory board, Dr. John P. Treanor, Dr. W. J. Walton, and Dr. Bradford Kent.

Physician Wanted in Ancon Insane Asylum.—The United States Civil Service Commission invites attention to the fact that among the vacancies to be filled as a result of the open competitive examination for physician, for men only, to be held on June 4, 1913, it is expected to fill one in this position at $150 a month, for service in the Insane Asylum at Ancon, Canal Zone, for which an unmarried man is desired. The Isthmian Canal Commission states that the appointee to this position must be experienced in the treatment of the insane, and without this experience it will be useless to make application.

A Memorial to Doctor Bristow.—It is planned to equip an x ray room in the new building of the Bushwick Hospital, Brooklyn, as a memorial to the late Dr. Algernon T. Bristow, who died on March 26th, as the result of infection contracted while performing an operation. Mr. and Mrs. Frederick B. Pratt have contributed $1,500 to the hospital fund for this purpose.

Chicago Medical Societies.—During the coming week meetings of medical societies will be held in Chicago as follows: Monday, May 19th, Chicago Ophthalmological Society; Tuesday, May 20th, Chicago Urological Society, Dermatological Society, Laryngological and Otological Society, and the Pediatric Society; Friday, May 23d, Aux Plaines Branch of the Chicago Medical Society.

Personal.—Dr. Emory R. Hayhurst, of Chicago, has been chosen by the Ohio State Board of Health to take charge of the bureau recently created by the State legislature to study occupational diseases.

Dr. Charles F. Painter has been elected dean of the medical and dental departments of Tufts College, Boston, to succeed Dr. Harold Williams, who resigned recently.

Dr. Jacob W. Bolotin, the blind physician of Chicago, has been appointed attending physician at the tuberculosis hospital at Dunning.

Meetings of Medical Societies to be Held in Philadelphia During the Coming Week.—Monday, May 19th, Medical Society of the Woman's Hospital and the Episcopal Hospital Clinical Society; Tuesday, May 20th, West and North Branches of the County Medical Society, Stomach Hospital Gastroenterological Society, and the Philadelphia Laryngological Society; Wednesday, May 21st, Section in Otology and Laryngology of the College of Physicians; Thursday, May 22d, Pathological Society, and the Germantown Branch of the County Society; Friday, May 23d, Northern Medical Association, South Branch of the County Society, and directors of the Medical Club.

In Honor of the Late Dr. Prince A. Morrow.—A meeting to commemorate the life and work of the late Dr. Prince A. Morrow will be held by the Society of Sanitary and Moral Prophylaxis, on Thursday evening, May 22d, at the New York Academy of Medicine. Addresses will be given as follows: Doctor Morrow the Physician, by Dr. Edward B. Bronson; Doctor Morrow the Educator, by Dr. Edward L. Keyes; Doctor Morrow the Philanthropist, by William A. Purrington, Esq.; Doctor Morrow's Work in Uplift, by John P. Peters, D. D.; and The Pioneer Qualities of Doctor Morrow as a Social Reformer, by Dr. Charles W. Eliot, president emeritus of Harvard University.

American Physicians' Travel Study Tour.—The Travel Study Tour of American Physicians to the Seventeenth International Congress of Medicine will sail from New York on the North German Lloyd Steamship *Bremen* on July 3rd. About seventy-five physicians will participate in this tour, the chairman of which is Dr. W. B. De Garmo, of New York, and Dr. Richard Kovacs, 236 East Sixty-ninth Street, New York, is secretary. In cooperation with the International Committee for Postgraduate Medical Education, arrangements have been made for visiting clinics and hospitals in Paris, Munich, Vienna, Berlin, Dresden, Cologne, Brussels, etc., and to inspect the health resorts of Carlsbad, Marienbad, Nauheim, Wiesbaden, Homburg, etc. No other party from America has ever enjoyed similar privileges. The party will finally attend the International Congress of Medicine in London, August 6th to 12th.

New York City's Spring Cleaning.—During the past week the Department of Health, in cooperation with the Street Cleaning Department, conducted a "cleanup" campaign for the purpose of improving the general sanitary conditions of the city. The object of the campaign was to remove all refuse and waste material from roofs, fire escapes, cellars, yards, alleys, air shafts, buildings, rooms, and apartments. An official notice was sent by the health department to every owner, occupant, or representative of every building, apartment, room, yard, or vacant lot, notifying them to prepare for removal all rubbish and waste material. Everywhere throughout the city householders responded enthusiastically to the orders of the health department and thousands of wagon loads of rubbish were taken in scows to Riker's Island, where it was used in filling. Altogether the plan of cleaning up the city has been a great success.

International Committee for Postgraduate Medical Education.—Announcement is made that brief courses in all branches of medical science will be given in Berlin, June 19th to 28th, by the Lecturers' Association for Medical Vacation Courses, for the first time under the auspices of the Central Committee for Medical Postgraduate Education in Prussia A complete programme of the series will be published in the near future. Foreign physicians will be admitted as far as space will permit, on the payment of a somewhat larger fee than that required of physicians licensed to practise in Germany. Applications must be sent to the Bureau of the Lecturers' Association, Berlin N. 24 Ziegelstrasse 10/11 (Langenbeckhaus).

Smallpox in Germany.—For nearly forty years Germany has had a law requiring the vaccination of all infants and the revaccination of children after the lapse of a number of years. It is understood that this law has been enforced generally throughout the Empire, with the result that Germany remains practically free from smallpox. According to a report published by the United States Public Health Service, during the year 1908 there were 434 cases of smallpox reported from 200 localities, with 65 deaths. Of these cases approximately one third occurred among foreigners. During the year 1909 the numer of smallpox cases in Germany was 247, with 26 deaths.

American Academy of Medicine.—The preliminary programme of the thirty-eighth annual meeting of the American Academy of Medicine, which will be held in Minneapolis, Minn., on June 13th, 14th, and 15th, has just been issued. An interesting feature of the programme will be a discussion on Physical Bases of Crime, twenty-nine papers on the subject having been promised. The officers of the Academy are: President, Dr. Ray Lyman Wilbur, of San Francisco; vice-presidents, Dr. Henry A. Tomlinson, of Willmar, Minn., Dr. W. Edgar Darnall, of Atlantic City, Dr. Alice Weld Tallant, of Philadelphia, and Dr. J. E. Tuckerman, of Cleveland; secretary and treasurer, Dr. Charles McIntire, of Easton, Pa.; assistant secretary, Dr. William J. Estes, Jr., of South Bethlehem, Pa.; chairman of the programme committee, Dr. Charles S. Sheldon, of Madison, Wis.; chairman of the committee on arrangements, Dr. Horace Newhart, of Minneapolis.

Graduate Nurse Wanted as Hospital Superintendent in South India.—The American Hospital for Women and Children, Madura, South India, wishes to engage the services of an American graduate nurse to act as superintendent of the institution. The hospital is equipped with 50 beds, and the staff consists of 2 American physicians, 1 Indian subassistant surgeon, 3 Indian compounders, 10 Indian nurses, and one Indian Bible woman. During the year 1911 there were 12,364 patients treated at the hospital, some of them coming 100 miles to be treated. Among the qualifications necessary for the work are a good constitution, a good education, a first calss hospital record, ability to learn the language, and qualities of leadership, as well as a deep spiritual life. The salary is $500 and room in the mission building; board is about $13 a month. For further information regarding this and similar positions write to Mr. Wilbert B. Smith, 600 Lexington Avenue, New York.

Mortality from Cancer in New York State.—According to statistics compiled by the New York State Department of Health, during the year 1912 there were reported throughout the State 8,234 deaths from cancer, an increase of more than 300 over the number of deaths in 1911. The death rate from cancer for the State was 85.9 in 100,000 of population, and 5.8 of all deaths recorded for the entire State during the year 1912 were due to cancer. The distribution of the total deaths from this disease, according to the part affected, was as follows: Cancer of the mouth, 290; cancer of the stomach and liver, 3,065; cancer of the peritoneum, intestines, and rectum, 1,211; cancer of the skin, 255; cancer of the breast, 749; cancer of the female genital organs, 1,207; cancer of other or unspecified organs, 1,457. There has been an increase in the number of deaths from cancer without exception yearly ever since 1885, when the State Department of Health began to keep records of the disease. Twenty-five years ago there were 2,000 deaths a year. The number has quadrupled since then, while the population has hardly doubled. Every year the cancer deaths exceed by from 150 to 500 the number of the year preceding. No other disease or condition has any such record.

Army Medical Corps Examinations.—The surgeon general of the United States Army announces that preliminary examinations for appointment of first lieutenants in the Army Medical Corps will be held on July 14, 1913, at points to be hereafter designated. Full information concerning these examinations can be procured upon application to the Surgeon General, United States Army, Washington, D. C. The essential requirements to secure an invitation are that the applicant shall be a citizen of the United States, shall be between twenty-two and thirty years of age, a graduate of a medical school legally authorized to confer the degree of M. D., shall be of good moral character and habits, and shall have had at least one year's hospital training as an interne, after graduation. The examinations will be held simultaneously throughout the country at points where boards can be convened. Due consideration will be given to localities from which applications are received, in order to lessen the traveling expenses of applicants as much as possible. In order to perfect all necessary arrangements for the examination, applications must be completed and in possession of the adjutant general at least three weeks before the date of examination. Early attention is therefore enjoined upon all intending applicants. There are at present forty vacancies in the Medical Corps of the United States Army.

United States Public Health Service Reports on the Friedmann Cure.—The first official opinion of the government authorities on the merits of the Friedmann serum for the cure of tuberculosis was given in a statement made on May 9th before the National Association for the Study and Prevention of Tuberculosis, at the annual meeting of the association in Washington, D. C. This statement was to the effect that the results of the treatment in the ninety-four cases of tuberculosis in New York hospitals do not justify the confidence in the remedy which has been inspired by widespread publicity. This finding of the experts of the United States Public Health Service was accepted immediately by the association as just grounds for the passing of resolutions warning the people against being led astray by unproved claims. These resolutions are as follows:

WHEREAS, Widespread publicity has been given to the claims of an alleged cure for tuberculosis;

Resolved, That there is no information before the National Association for the Study and Prevention of Tuberculosis to justify the belief that any specific cure for tuberculosis has been discovered which deserves the confidences of the medical profession or the people, and,

Resolved, That it is the duty of the public to continue unabated all the present well tried agencies for the treatment and prevention of tuberculosis.

The government's report was read by Dr. John F. Anderson, chairman of the board appointed to investigate the treatment.

The New Phipps Institute Dedicated.—The new building of the Henry Phipps Institute, at Seventh and Lombard Streets, Philadelphia, was dedicated on the afternoon of May 10th, under the direction of the University of Pennsylvania. Simultaneously with the dedicatory exercises, the University of Pennsylvania conferred honorary degrees on Henry Phipps, donor of the $1,000,000 fund which made the institute possible, and on Dr. Edward L. Trudeau, who founded the Adirondack sanitarium for the treatment of incipient consumption. The principal address at the dedication was delivered by Dr. Herman M. Biggs, of New York. Provost Edgar F. Smith, of the University of Pennsylvania, presided. The institute building is not primarily a hospital, although it has accommodations for twenty-four patients. The chief work of its staff, aside from dispensary and hospital treatment of patients in various classifications, will be sociological, educational and preventive. The sociological work of the institute consists of investigating the relationship of tuberculosis to garment making trades. This work involves the examination of workers, inspection of factories, and investigation of living conditions of workers' homes. It also includes the study of housing conditions of people in several selected blocks. It has been experimenting in a small court, where it has improved the sanitary conditions by supervising the patients in their living. Another department of the social service attends to the details of seeing that patients are distributed to the various sanatoriums, hospitals and relief agencies. The executive director of the institute is Dr. Charles J. Hatfield; the director of the clinical and sociological departments, Dr. H. R. M. Landis, and the director of the pathological department, Dr. Paul A. Lewis.

Pith of Progressive Literature.

BERLINER KLINISCHE WOCHENSCHRIFT.

March 3, 1913.

Injuries of the Kidneys during Eclampsia.—A. Zinsser is of the opinion that in true eclampsia the treatment aimed at the kidney alone is utterly useless, since the injury to that organ is merely an episode in the drama of eclampsia, and when it becomes so extensive that the entire organism may succumb to it, the other impairments in the various organs are so far advanced that the saving of the kidney alone would be futile.

Statistics of Gastric Resections; 157 Cases Treated in the Last Five and a Half Years at the Surgical Clinic in Breslau.—S. Weil summarizes the results as follows: Of all the 157 patients treated from 1907 to 1909 for gastric carcinoma in the surgical clinic in Breslau, only from two to three per cent. were permanently cured. This result would be discouraging were we not to consider that the resection of the stomach as a palliative procedure influences the condition of the patient favorably for a considerable length of time—much greater than does gatsorenterostomy. A better showing can only be reached when the patient is referred to the operator much earlier than has hitherto been done.

Internal Secretion and Nervous System.—A. Münzer says, in the conclusion of his contribution, that according to the teachings of physiology and pathology the functions of the blood glands (*Blutdrüse*) are intimately connected with the function of the nervous system. All the reactions brought about by the blood glands are arranged by this. Only certain portions of it are influenced, namely, brain, and, possibly, spinal cord, or sympathetic system. The nature of these mutual reactions is explained by the supposition that the secretions of the blood glands serve the purpose of regulating the tonus of the influenced portions of the nervous system. The individual blood glands perhaps exert only a special affinitive influence upon a certain portion of the nervous system, and not the whole of it. The specific affinities of the blood glands to the different divisions of the nervous system may serve as a means of classification for the polyglandular system. It may be of therapeutic value to know that tonus is brought about by certain of these divisions.

March 10, 1913.

Three Cases of Endocarditis Lenta.—J. Lewinski says that endocarditis lenta is a chronic sepsis with localizations in the valves of the heart and is caused by a well recognized bacillus, the *Streptococcus viridans.* The prognosis is unfavorable; the patients of the three cases here reported died. Therapeutically, all chemical substances are worthless. Bacteriological therapy would seem to offer a somewhat better prospect, particularly vaccine treatment, which should be given as early as possible, before the body has lost its power of resistance.

The Oldest Influenza Epidemic, in Persia and Mesopotamia 855 A. D.—E. Mittwoch says, in the chronicle of Hamza al Isfahani, there is a report of a cold wind which in 855 A. D., came out of the land of the Turks and caused cough and catarrh. The mortality was not as great as in the plague. This is probably the oldest recorded influenzal epidemic, and the course of the disease is accurately described.

March 17, 1913.

Advances in the Treatment of Diabetes mellitus in the Past Fifty Years.—Lepine reviews this subject for the past fifty years and observes that diabetes on the whole has become less severe since its treatment has improved. It has, however, increased in frequency. The mortality has not kept pace with the frequency on account of the better therapy. In the future a better special remedy may be found than is possessed at the present time, a glycolyptic and ketolyptic remedy. Until then we must, in our treatment, continue to be guided by the elements of the apparent pathogenesis of the condition.

Should Neosalvarsan Be Given to Ambulatory Patients?—Touton declares uncalled for the warnings of Wolff and Mulzer and all others who speak against the ambulatory treatment with neosalvarsan because their conclusions are based upon the unfavorable results of their own faulty technic (too large and too frequent doses), and not upon careful methods such as outlined by the author. The banishment of neosalvarsan from the armamentarium of the surgeon has been the result of a hasty misjudgment.

March 24, 1913.

Treatment of Basedow's Disease.—A. Rubino reiterates that Basedow's disease in a vast majority of the cases is due to excessive secretion of the thyroid, and therefore its treatment with an antithyroidin of Möbius is to be more highly recommended than any other. This treatment is, of course, to be used in conjunction with general hygienic and dietetic measures. When the hypertrophy of the thyroid assumes marked proportions, galvanization of the sympathetic nerve on both sides of the neck should be tried, or else faradization or the application of the Röntgen rays. In unchecked advance of the general symptoms a partial resection of the hypertrophied thyroid is indicated.

The Reaction of Congestion in Arteriosclerosis.—C. Hertzell found that by completely interrupting the blood circulation in the recumbent subject in both lower limbs and one arm by pneumatic compression, the congestion reaction takes place in the remaining arm with an increase of pressure of about five mm. mercury in the normal individual. In those having arteriosclerosis there is under similar conditions a rise in the arm up to sixty mm. or more. By the changes in the circulatory system in this disease is lost the possibility of compensatory dilatation in the affected portions of the system. The positive absence of the congestion reaction indicates that hydriatic procedures should be employed with great caution, since they place greater demands on the regulating functions of the circulatory system.

The Action of Heavy Metals upon Malignant Tumors.—C. Lewin's injection of the heavy metals in malignant animal tumors has given striking results, which depend upon the selective action

of the metals upon the smallest bloodvessels of the tumor.

March 31, 1913.

The Present Remedies for Syphilis and Their Application in Practice.—Touton believes that mercury is still the safest remedy for syphilis. Salvarsan has not displaced it, and both rank about the same in value. The combination of a mercurial course, with a few salvarsan injections, at present offers the best and most hopeful therapy. The author appends at the end of his article a plan of treatment for the whole course of the disease, without, however, making it schematical.

Duodenal Ulcers in the First Year of Life.—W. Schmidt asserts that duodenal ulcer in the first year of life is more common than is usually supposed and, as a matter of fact, is more frequently found in this than in all the seven years following. Every indisposition of the child which is accompanied by weakening of its organism favors the formation of such ulcers.

PRESSE MÉDICALE.

April 16, 1913.

Cerebrospinal Fluid in Central Nervous Syphilis and Parasyphilis.—Henri Roger states that the reactions of the cerebrospinal fluid that are of greatest significance in the diagnosis of syphilis of the central nervous system are lymphocytosis, an excess of albumin, and especially a positive Wassermann reaction of this fluid. If the Wassermann test carried out with the blood serum is simultaneously negative, the presence of nervous syphilis is practically certain. A negative Wassermann reaction with the cerebrospinal fluid does not prove that the disturbance present, e. g., tabes, is not of syphilitic origin; if lymphocytosis and hyperalbuminosis are also absent, however, and the Wassermann reaction with the blood is positive, a diagnosis of central nervous syphilis is not warranted. In early malignant syphilis of the nervous system, the four reactions are distinctly positive, whereas later, except in general paralysis, only three persist, the blood Wassermann reaction becoming negative. Conditions apparently unrelated to the nervous system, e. g., perforating ulcers and gastric crises, can be definitely referred to a latent syphilitic or parasyphilitic meningitis if a leucocytosis in the cerebrospinal fluid is detected. In the secondary stage of syphilis the degree of meningeal reaction, as reflected in lymphocytosis in the cerebrospinal fluid, is considered by some a better criterion as to the intensity of the infection than the blood Wassermann reaction. According to Neisser, no case of syphilis should be considered cured, even with a negative Wassermann reaction, unless the cerebrospinal fluid has been examined. More than ordinary caution is required in the administration of salvarsan when an intense meningeal reaction, as shown by the various tests already mentioned, is present.

SEMAINE MÉDICALE.

April 16, 1913.

Bacteriological Diagnosis of Whooping Cough.—M. P. Weil presents a critical review of the work so far done in this direction. In the early stages of pertussis the method of choice in the laboratory diagnosis of the disease is direct examination of the sputum, in which the characteristic bacillus can be recognized and later cultivated. Complement deviation tests are useful only for incomplete (*frustes*) or symptomatically atypical cases, as they become constantly positive only two weeks after the onset of the affection, and their value in typical cases is thus very slight.

REVUE DE MÉDECINE.

April, 1913.

Postapoplectic Fixed Amnesia of Twenty-three Years' Duration.—H. Mabille and A. Pitres report the case of a syphilitic, stricken with apoplexy in 1885, at the age of thirty-four years. After remaining paretic, especially on the left side, and intellectually weak for some months, he recovered almost completely in the former and partially in the latter respect. It was then noted that although all occurrences previous to the apoplexy were recollected by the patient, he had been incapable of fixing in his mind any facts brought to his attention since that time. Nothing could be remembered for more than five or ten seconds. Twenty-three years after the ictus the condition remained exactly the same, the patient always asserting that he had entered the institution the same day, and being ignorant of the customs prevailing there. Death took place from pneumonia in 1908. Brain lesions were found at the autopsy to be limited to two cavities anterior to the caudate nuclei, hollowed out in the central white matter of the prefrontal lobes. On the right side the caudate nucleus was slightly involved, but in neither internal capsule were the true pathways affected. The effect of the lesions had been merely functional isolation of the prefrontal from the temporal and occipital convolutions, without injury to either. In conjunction with the experimental work of Franz in monkeys and cats, this case shows that the fixation of a sensation takes place in a different point of the brain from its perception. No sensation which has not been analyzed and elaborated in the frontal lobes can become fixed in the mind.

Malaria and Pneumococcus Infection.—Lafforgue, after calling attention to the more or less frequent coexistence of pneumococcus infection with other infections or with toxic states, reports cases illustrating the fact that acute malarial disturbances are capable of favoring the development of a latent pneumococcic infection and its generalization in the form of a septicemia. This may be due either to weakening of the functions of various organs owing to the sudden onslaught of the malarial organisms, and perhaps, also, to deficient phagocytosis through overloading of the leucocytes with remnants of red cells, or to hemoglobinuria favoring the growth of the pneumococcus. The author enjoins that in malarial districts the possible favoring influence of this infection in cases of pneumonia be borne in mind, and the specific action of quinine availed of.

ROUSSKY VRATCH.

March 2, 1913.

Diphtheria of the Sexual Organs of Children. V. N. Klimenko observed a case of primary diphtheritic vulvovaginitis in a girl, ten and a half

years old. Repeated cultures failed to reveal diphtheria bacilli in the nose and throat, but cultures from the vaginal secretions proved positive and virulent. The patient died notwithstanding the use of antitoxine. The author collected a number of cases from Russian and other European literature, showing the frequency of primary diphtheria of the genitals in children, particularly girls. The mode of infection is usually by contact of the genitals with towels used by diphtheria patients. However, a lowering of local resistance must occur before infection can take place. The course of the disease and treatment do not differ from those of diphtheria in the nasopharynx.

Typhoid Endotoxine.—M. I. Barantchik concludes from his laboratory studies that the typhoid bacillus does not secrete toxine, but that the pathogenicity is due to endotoxines which are liberated from the bodies of the bacilli. These endotoxines are specific in their action, giving rise to specific antibodies, such as agglutinins, precipitins, bacteriolysins, and substances which fix the complement.

Experiments on Dialysis of Antidiphtheritic Serum by Means of Collodion Bags.—A. A. Urgelunas and N. I. Griaznoff succeeded in removing considerable albumin from diphtheria antitoxine (about five per cent.) by dialysis through collodion bags. The dialysate contained from ten to fifteen per cent. of the original antitoxine strength.

March 9, 1913.

The Diagnostic Significance of Increased Amount of Neutral Sulphur in the Urine of Patients with Cancer.—S. N. Alekseeff investigated Solomon and Saxl's method of determining neutral sulphur in the urine as a diagnostic aid in carcinoma. He applied the test in forty-nine cases of different diseases, including nineteen cases of cancer, and found that the test is not pathognomonic, although positive results together with suspicious clinical symptoms may have some diagnostic value.

The Employment of Pituitrin in Seventeen Cases of Labor in the Obstetric Department of the Tchernigoff District Hospital.—A. S. Kotelnikova reports seventeen cases of labor in which pituitrin was used. In ten, or fifty-eight per cent., the results were exceptionally good. Immediately after the injection uterine contractions became stronger, with either further dilatation of the os or further progress of the fetus. No bad effects were observed when pituitrin was administered before dilatation was complete—on the contrary, it seemed to facilitate dilatation, nor was the effect bad on the detachment of the placenta, the latter having been expelled spontaneously in twelve out of seventeen cases. In case of failure the injection may be repeated in two, five, or six hours.

BRITISH MEDICAL JOURNAL.

April 26, 1913.

The Uses and Abuses of Proprietary Foods in Infant Feeding.—H. C. Cameron believes that excess of sugar in the diet of the infants of the poorer classes is by far the most common cause of dyspepsia. The sugars undergo fermentative changes with the formation of an excess of volatile fatty acids; the contents of the stomach become intensely acid; reaching the intestine, these act as a powerful stimulus to peristalsis. In such cases the reaction of the stools is always acid, they are green and watery, and owing to their acidity, they irritate the anus and buttocks. The increased peristalsis may be so great as to cause marked cramp colic. In such cases the tolerance for sugar falls far below the normal for the healthy infant, and for a time it may be impossible to give the patients enough to supply their caloric needs, and a true marasmus is produced. Most of the proprietary foods are composed chiefly of carbohydrate and are therefore liable to cause fermentative dyspepsia in those infants whose sugar tolerance is small or has been reduced by improper feeding. Such as contain maltose are of considerable value even in the cases in which there is a diminished sugar tolerance, for maltose is the least liable of the sugars to undergo fermentation and it may, therefore, be a useful means of supplying the needed sugar to such cases as cannot handle the ordinary sugars. These foods are too poor in fats for older infants, they are relatively expensive, and they permit the development of scurvy. Foods consisting almost entirely of unaltered starch are useful for infants over seven months of age. An infant suffering from sugar dyspepsia should be treated as follows: A purge and twenty-four hours of starvation, during which only small amounts of boiled water sweetened with saccharin are allowed, are then followed by the administration of a few drops of diluted hydrochloric acid, given in mucilage and syrup, every four hours. When the symptoms have improved feeding may be begun with the use of small quantities of boiled milk undiluted. From this point a gradual ascension to a proper diet is made.

Gonococcal Urethritis in a Boy, Aged Seventeen Months.—Archibald Smith and C. S. McKee report this rare case, confirming the diagnosis by a cultural identification of the organisms. The first symptoms were inability to void urine and a moderate redness of the foreskin. A typical balanitis soon developed, and four days later a urethral discharge, from which the gonococcus was isolated. Infection seems to have occurred as a result of the child's being taken into his nurse's bed with her. The use of a colloidal silver preparation brought about a prompt cure.

Adrenalin in Chloroform Anesthesia.—H. T. Depree reports sudden death from stoppage of the heart as a result of the injection of five minims of a one in 1,000 solution of adrenalin into the nose of a patient who had been anesthetized with chloroform. At the time of the injection anesthesia was light, the corneal reflex being brisk, and no more chloroform was given. All attempts to resuscitate the heart failed. Depree calls attention to Levy's observations on cats to the effect that adrenalin by vein in light chloroform anesthesia caused death by fibrillation of the ventricles, and suggests that this case is a similar occurrence in man.

LANCET.

April 26, 1913.

Vaccinations for Various Infections with Living Microorganisms.—W. Broughton-Alcock gives the results of the use of vaccines made from various strains of staphylococci and streptococci

and the gonococcus. In a series of 150 cases there has been no ill effect of the use of the living sensitized organisms. In twenty-six cases of uncomplicated acute gonococcal urethritis thus treated there was only one in which the discharge ceased and the gonococci disappeared from the secretions, and the author is inclined to discount this as not being attributable to the use of the vaccines. In this series he used various ones, autogenous, non-autogenous, and polyvalent living sensitized vaccines, and also the same killed and in amounts up to three billions at a single injection. In cases complicated by orchitis and epididymitis this method of vaccination gave most satisfactory results; most patients were free from pain after the first injection, and all after the third injection—that is within a week. Large doses seemed to give quicker relief. Two cases relapsed, probably from a prolonged interval between injections. Four cases in the group of gonococcal rheumatism, tendinitis, periarthritis, and arthritis with exudation gave remarkable results. After the first injection, and within forty-eight hours, the acutely inflamed joints were freely movable without pain and the exudation disappeared in three days. The cures had persisted when the patients were seen a month afterward. The cases of subacute tendinitis without exudation required from one to three weeks of injections before cure. Great value lies in large doses, and it is possible to start with from 500-3,000 million sensitized organisms without causing a very severe local reaction. Broughton-Alcock adds that he has as yet seen no advantage in the living sensitized organisms over the dead sensitized ones in this condition. In the case of staphylococcal vaccines the living organisms are far more useful than the dead, and it is of great importance to be certain that the organism used is the causative one. Here, as with the streptococci, the factor of symbiosis in the case of external conditions introduces an element of great uncertainty as to which of the strains isolated is the principal offender. Mixed vaccines, and even stock ones, not infrequently give the best results in these cases. It seems safe to begin with doses of twenty million staphylococci or streptococci and 200 million dead gonococci.

The Tests for Acetoacetic Acid, Including a Simple New Test.—W. H. Hurtley discusses the common tests in use and offers the following new test as being the most suitable for obtaining an idea of the amount of acetoacetic acid in a urine. To ten c. c. of urine add 2.5 c. c. of concentrated hydrochloric acid and one c. c. of a one per cent. solution of sodium nitrate; shake and allow the mixture to stand for two minutes. Add fifteen c. c. of strong ammonia, followed by five c. c. of a ten per cent. solution of ferrous sulphate or a ferrous chloride solution of equivalent iron content (two grammes iron in 100 c. c.); shake, pour into a Nessler glass, and allow to stand undisturbed. Do not filter. A positive reaction is present when a beautiful violet or purple color is produced. The reaction is slow, the speed with which the color develops depending on the concentration of the acetoacetic acid present. Acetone does not give this test. The test is delicate to the detection of one part of acetoacetic acid in 50,000 parts of solution. By preparation of known dilutions of acetoacetic acid for comparison with the unknown urines the test may be made accurately quantitative.

PRACTITIONER.

April, 1913.

Chronic Cystitis and Retention of Urine; Treatment by Drainage and Its Beneficial Effect upon Damaged Kidneys.—David Newman discusses chronic inflammation of the bladder and its treatment by intermittent catheterization and irrigation, continuous drainage by tying in a catheter passed through the whole urethra, continuous drainage through the perineum, and suprapubic drainage, and arrives at the following conclusions: 1. Obstruction to the free escape of urine, involving increased tension in the kidneys, may lead to the development of symptoms—polyuria, albuminuria, and toxemia—resembling those of interstitial nephritis, which form serious complications of the bladder trouble, and, if not relieved, ultimately lead to toxemia. 2. Suprapubic cystotomy is the best method of draining. 3. By free continuous drainage of the bladder these symptoms diminish and ultimately disappear, and the patient is placed in a more favorable condition for operation should further treatment be required. 4. Free continuous drainage is also followed by diminution in the size of the kidneys and contraction of the ureters, so that the orifices regain their normal valvular action. 5. In chronic cystitis, free drainage by suprapubic cystotomy is the surest method of giving relief to the symptoms, or of curing the disease.

Modern Urinary Surgery; Points for the Practitioner.—Henry Curtis says that the first and most essential thing for the practitioner to recognize is that, both in men and women, tuberculous cystitis, in the vast preponderance of cases, is secondary to renal disease, and that, accepting this proved fact, it is little short of criminal to treat such cystitis locally, on the idea that it is the primary trouble. Its precursor is almost always renal tuberculosis. Another essential fact is that renal tuberculosis is a unilateral local disease in from eighty to ninety per cent. of the early cases, and tends to remain so for from one to seven years. A third fact of vital importance is that, though the symptoms may become latent, sometimes for long periods, unilateral renal tuberculosis leads inevitably to complete destruction of the kidney. The more general the recognition and acceptance of these fundamental facts and, in consequence, the earlier the diagnosis of the primary renal focus, the better the chance for a radical cure of urinary tuberculosis by nephrectomy.

Diagnosis of Neurasthenia.—Ivo Geikie Cobb says that while neurasthenia and hysteria have many features in common they have striking differences, which are plainly exhibited in the following table:

NEURASTHENIA.	HYSTERIA.
Sex. Both, principally the male.	Sex. Mainly the female.
Age. Any age, the third and fourth decades being far the commonest.	Age. Principally young women, or women at the climacteric.
Mental condition. Weakness of intellect, slow to	Mental condition. Abnormally active intellect and emotions, deficient will pow-

NEURASTHENIA.	HYSTERIA.
grasp facts, easily forgetting even important events of recent occurrence. Will power often unaltered, many "phobias."	er, recurring attacks of loss of volition, and various seizures, but little introspection.
Physical condition. Languor, weakness of muscular system, reflexes often increased, all bodily functions badly performed; no trophic changes and no wasting.	Physical condition. In apparently good health between the seizures, but syncopal attacks common, and sometimes pseudomaniacal attacks. Bodily functions well performed, digestion and excretion being good.
General symptoms. Weakness of mind and body, mental depression, skull-cap headache, constipation, dyspepsia, insomnia, limb tremor (sometimes more marked on attention), irregular areas of anesthesia or hyperesthesia, but never regular in distribution, and never hemianesthetic.	General symptoms. Good health interrupted by various seizures. Anesthesia, regular in distribution, hemianesthesia common. Involuntary muscular spasm exemplified by globus, borborygmata, and flatulence. Enjoyment of life keen.
Progress. Tedious, but curable.	Progress. Attacks often relieved by undue stimulation, e. g., nerve pressure, faradic current, etc. Hysteria is hereditary, and patients are born with the diathesis. Alleviated by treatment.

The following points are worth noting with regard to the differentiation of the early stage of general paralysis from neurasthenia: 1. In neurasthenia the patient comes of his own accord to consult the doctor, whereas in general paralysis he is brought by some relative or friend, who has noticed changes in his behavior or conduct. 2. In general paralysis the pupils are often irregular and sometimes miotic; if there is any alteration in neurasthenia it is rather that they are large and slow to react. 3. The neurasthenic brings with him an account of his case, generally written at some length, but quite intelligible; whereas the general paralytic discloses his case in an unsatisfactory manner, and is frequently irrational in his recital. 4. Amnesia is a more marked feature in general paralysis than in neurasthenia.

CANADIAN MEDICAL ASSOCIATION JOURNAL.

April, 1913.

Clinical Observations on Arteriosclerosis.—James Third discusses three classes of people, physicians and surgeons from fifty to sixty, women from forty-five to sixty, and business men from forty-five to sixty-five years of age. He finds that the great majority of deaths in these classes are due to breaking down of the cardiovasculorenal system, in other words, to arteriosclerosis, which he considers to be, up to a certain age, a preventable disease. In the first and third classes he ascribes the disease to mental overwork, imperfect digestion, and autointoxication from the absorption of toxines. In the second class excessive tension at the climacteric goes on to definite sclerosis in a large number of cases, found to be thirty-three per cent. in a series of 250. Under general management, he says: "A careful examination is the first essential in treatment. It quiets useless fears, inspires confidence, and gains intelligent cooperation. If a business man, he should relax, but not relinquish his grip on business, and should take frequent holidays, especially at some of our mineral springs." He ascribes the improvement obtained in many patients with excessive tension and even well marked arteriosclerosis to the laxative waters, the regular hours, the quiet restfulness of the place, the cheery optimism, and its reputation as a healing shrine. He thinks that in routine practice to-day, too much dependence is placed on vasodilators and iodides. A certain degree of excessive tension is necessary. The nitrites may relieve some symptoms for a time, but only for a time. Except in the earliest stages of the disease he has never seen any permanent benefit from the iodides. Judicious purgation will do more than anything else to restore the equilibrium. Alcohol should be prohibited, and tea and tobacco also if there are intermittent pains in the calves relieved by resting. Too many restrictions will not do: the mental attitude of the patient must be considered and life be made worth living.

BOSTON MEDICAL AND SURGICAL JOURNAL.

May 1, 1913.

Infections of the Upper Urinary Tract in Infancy and Childhood.—Robert M. Green says that in infants and children infections of the upper urinary tract, though infrequent, are likely to occur without adequate apparent antecedent cause. Their onset is acute, their clinical picture definite, and their recognition often missed on account of their simulation of other infectious conditions. The two most usual forms are acute pyelitis and acute inflammatory nephritis. The latter is most commonly hematogenous in origin, the former probably proceeds by lymphatic extension from the intestine. Predisposing causes are calculi, constipation, phimosis, anal fissures, and foci of infection elsewhere. The classic signs of both are pyexia, pyuria, and tenderness in the costovertebral angle. Differential diagnosis depends on examination of the urine. The treatment consists of rest, milk diet, aqueous diuresis, moderate catharsis, hexamethylenamine, with sodium benzoate, potassium citrate, or vaccine in obstinate cases; surgery only as a final measure.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

May 3, 1913.

Shattering of Femur with Extensive Compound Injury of Soft Parts.—J. J. Buchanan reports a case of this character, with recovery without operation and with useful limb, which illustrates the marvelous power of Nature to restore function to a bone which is apparently hopelessly shattered, the advantages of the Fabian policy in wounds with inaccessible depths and unknown tendencies to infection, and the fallacy of the belief that satisfactory function cannot follow unless fractures are anatomically adjusted.

A Possible Source of Danger in the Use of Antimeningitis Serum.—S. P. Kramer calls attention to fact that phenols have a great affinity for nervous tissue which is proved by the fact that a considerable percentage of phenol ingested has been recovered from the brain in cases of phenol poisoning. The phenols are all readily miscible in lipoid substances, which may explain their toxicity on the nervous system. This is important in view of the fact that tricresol is pretty generally used to preserve the various serums, and the writer believes the conclusion justified that serum containing

0.5 per cent. tricresol cannot be safely injected into the subarrachnoidal space.

MEDICAL RECORD.

May 3, 1913.

The Pathogenesis of the Gastric Crises of Tabes.—E. Castelli and T. Pinel claim that it has been demonstrated that the gastric crises are secondary to the painful irritation of the dorsal roots which furnish both the sensibility of the intercostal nerves and the sensitive fibres running to the gastric mucous membranes. When these fibres are simultaneously irritated there result intercostal and gastric pains which initiate the bulbar reflex of vomiting. All interventions are legitimate and rational, which, taking this point of view as departure, will attempt to approach the dorsal roots. The degenerative lesions are almost entirely found on the roots of the dorsal region from the second to the sixth dorsal which seems to demonstrate the dorsal systemization of the gastric crises. Of the operative measures proposed for the relief of this condition the writers discuss the Foerster, the Franke, and the Guleeke operations, and finally suggest one brought forward by themselves, which consists in the ligature of the two roots, anterior and posterior, as far as possible from the ganglion. This can be very rapidly done after laminectomy without any dissection; to this ligature might be added the section of the two roots, but this would be unnecessary. In this way the tabetic radicular lesion is reached; the reflex connections between the sensory ganglion and the medullary centres are completely intercepted, and the patients are not exposed to the dangers of infection of the meningeal cavities because the exit of the cerebrospinal fluid is avoided.

Newer Ideas Concerning the Problem of Cancer Etiology.—Leverett D. Bristol treats this question from a broad standpoint, combining biology, chemistry, physics, physiology, bacteriology, and pathology rather than any one of these alone. Primary and secondary "precancerous" stages are discussed as a basis for the development of cancer; the primary stage being local cell and tissue degeneration or necrosis due to all the known causes of such changes, which includes mechanical, chemical, physical parasitical, and physiological factors; the secondary "precancerous" stage being a local disturbance of chemical equilibrium, a chemical rearrangement, including an affinity of these degenerated areas for, and an attraction to them of, certain inorganic salts of the blood, a local disordered metabolism involving physical and chemical conditions in cell and tissue. It is then suggested that such a change in local chemical environment may influence the growth of adjacent cells through increased permeability, absorptive powers, and oxidations, and induce accelerated activity and growth, even to malignancy. These ideas are finally adapted to the important phenomena of cancer. The writer hopes that what may seem impracticable in these ideas may stimulate further work in cancer research.

Results of Operation for Gastric Ulcer.—Albert F. R. Andresen makes a plea for radical operation when operation is indicated. He concludes, however, that patients with simple uncomplicated gastric ulcer should not be subjected to operation except in the presence of one of the definite indications mentioned by him. In cases of gastric ulcer requiring operation the operation of choice is excision of the ulcer combined with gastroenterostomy, which should be performed wherever the condition of the patient will allow of it. When the patient's condition is not good, however, and operation is imperative, a palliative operation should be performed, advising that subsequent operation may be required. In all cases thorough postoperative treatment should be insisted upon, and should be entrusted only to specially qualified persons. Only when the patient is in the hands of a competent internist should the surgeon consider his duty at an end. The writer reports ten cases.

The Passing of Parasyphilis.—S. Pollitzer reminds us that Noguchi's discovery of spirochetes in the brain in paresis closes a most interesting chapter in the history of syphilis, as it has not only cleared away the dust of forty years of controversy, but has proved that paresis is not an indirect effect of syphilis, but is a disseminated spirillosis of the brain, is syphilis itself. Among many new things we have learned that the spirochetes within a few weeks of their inoculation invade every tissue of the body, and, not least, the central nervous system. If not destroyed there by the natural agencies of defense or by treatment, irreparable damage results. The lesson is obvious; every case of syphilis should receive the most energetic treatment as soon after infection as the diagnosis can be made. That treatment should await the development of secondary symptoms is an antiquated notion, and one strongly and unqualifiedly to be condemned, since the system by that time is flooded with spirochetes. By the demonstration of spirochetes in the initial lesion must the diagnosis be made, and the treatment by excision or destruction of the chancre and repeated doses of salvarsan, followed by an energetic course of mercury, be at once begun. In this way only can we hope to ward off the severe tertiary lesions of syphilis, the most terrible of which are those spirilloses of the central nervous system formerly known as parasyphilitic.

The Significance and Management of Overtension.—Henry F. Stoll concludes that in about ninety per cent. of patients with persistent overtension, there is a pathological process in either kidney or arteries. The essential blood pressure in these cases is materially higher than in health, and any attempt to reduce it to the so called "normal" is hazardous. A considerable part of the overtension, however, is often of the so called "incidental" sort which is caused by the activities of life and various endogenous and exogenous toxines. Successful treatment of overtension rests upon our ability to reduce this incidental pressure by moderation in all things—in eating and drinking, in play and in work.

Post Mortem Ophthalmoscopy; Segmentary Intravascular Coagulation.—Morris H. Kahn, in this connection, observes that in the last agonal glance there usually spontaneously occurs a marked dilatation of the pupils. Sometimes, however, there is but little, if any, dilatation. When mydriasis is present examination is made with the electrical

ophthalmoscope, the direct and the indirect methods being both employed. When the pupils remain contracted after death, they are dilated with a few drops of a solution of atropine or homatropine, this being done before iridal rigor sets in, three or four hours after the patient ceases breathing. Where the eyeball is left exposed for some time after death, drying of the cornea takes place. The resulting opacity can be overcome by moistening with water, or when a mydriatic is needed, it will serve a double purpose. Another method is the examination of the fundus oculi through a glass slide overlying the cornea, and separated from it by a drop of water, as suggested by Cocius and by Czermak. Three cases are reported by the writer, with the results of post mortem ophthalmoscopy recorded; in the last of which, the observation being made five minutes after death, there was to be seen a transverse cleavage of the upper outer retinal branch, with the formation of an intercoagular space. Poor circulation existing for hours before death might explain this early occurrence. During this time circulatory stasis favored later coagulation.

AMERICAN JOURNAL OF OPHTHALMOLOGY.

April, 1913.

Report of a Case of Sympathetic Ophthalmia Developing Seven Days after Operation and Treated with Neosalvarsan; Recovery.—F. Phinizy Calhoun reports a case that is of particular interest because of the rapidity of the onset of sympathetic ophthalmia. Ordinarily this disease sets in about six weeks after the injury, and the shortest interval known is stated by some writers to be fourteen days. In this case an iridectomy was performed on an eye that had been badly injured by iritis. Seven days later the other eye began to suffer from photophobia, the deeper vessels were engorged, and precipitates were found on the posterior surface of the cornea, distinct symptoms of a commencing sympathetic ophthalmia. The eye that had been operated on was enucleated at once, the patient was placed in bed, and the usual treatment, hot bathing, atropine and dionin locally, with sodium salicylate, mercury, potassium iodide, and hexamethylenamine internally, was begun, but the eye constantly grew worse. Finally, although the Wassermann reaction was negative, 0.7 gramme of neosalvarsan was given intravenously. Improvement began at once and proceeded to recovery. As the writer says, the arsenical preparation may have been given at the very turning point or crisis of the disease, and that its effect may be overestimated, but it apparently had some power in controlling the disease.

NEW ORLEANS MEDICAL AND SURGICAL JOURNAL.

April, 1913.

Control of Diphtheria.—William H. Seeman observes that one of the great problems in the handling of epidemics is to teach the public that the so called "well" carrier is as potentially dangerous as the carrier "sick in bed," only more so, because of his greater freedom. Analyzing nearly 900 cases controlled by the city board of health laboratory, the writer found the average time at which the bacilli disappeared from the throat to be about nine days. One case remained infected for fifty-two days and one for forty-two days, which shows the absolute necessity of control over convalescents.

Nasal Diphtheria in the Public Schools.—Edmund Moss has found that the words diphtheria and membrane have been so closely associated in the past that it is hard for the clinician to grasp the one without the other. For the writer a running nose, with excoriations of nose or lip, is sufficient ground for isolation and culture. These unrecognized cases mix with the other children and by direct infection, or by expectorating on the floor, contaminate the dust which will be inhaled by others, and so spread the disease. The writer states three causes for the spread of diphtheria. First, is the failure of the physician to look for and recognize the nasal and catarrhal forms of diphtheria; second, the lax house quarantine service for which the attending physician is responsible, and, finally, the custom of dry sweeping in the public schools.

The Heart in Diphtheria.—John B. Elliott, Jr., alleges that the diphtheria's main effect upon the heart is an acute myocardial degeneration, both fatty and interstitial; a degeneration of the pneumogastric nerve may occur. The main symptoms that call attention to the heart are tachycardia or bradycardia, dyspnea, epigastric pain, and, finally and of paramount clinical importance, gallop rhythm and late vomiting. Rest, flat in bed, with bed pan and urinal in use, and no exertion allowed, is the first and last words in treatment. Digitals may do harm; strychnine may do good.

Anaphylaxis; Report of a Case.—M. J. Magruder reports a case of anaphylaxis in which for a time death seemed imminent. The writer suggests that when serum is to be used that hypodermic and various emergency tablets be at hand. He also advises personal supervision of the patient to whom serum has been administered for at least a half hour. He deprecates the use of serum in doubtful cases or as a prophylactic. When used in appropriate cases a small initial dose is suggested, a wait of half an hour, and then the full dose, especially if anaphylaxis is feared.

Diphtheria of the Ear and Nasopharynx.—W. Scheppegrell sees danger in cases of primary diphtheria of the nasopharynx, not only on account of its difficult diagnosis making it serious for the patient by involvement of adjacent structures, but also the liability of infecting others on account of the disease escaping recognition. This, he believes, is one of the causes of the persistence of epidemics.

NEW YORK STATE JOURNAL OF MEDICINE.

April, 1913.

Gonorrheal Conjunctivitis Aborted by a Two Per Cent. Solution of Silver Nitrate.—J. Herbert Claibourne wipes the secretion from the lashes and mucous membrane of the everted lids with gauze. The whole conjunctival sac is then filled with a two per cent. solution of silver nitrate, which is allowed to remain for thirty seconds, and then wiped away with gauze. Immediately afterward the lids begin to swell and become fiery red. Atropine should then be ordered, and a solution of mercury bichloride (one in 3,000) may be used every two hours, together with constant ice application. In less than

twenty-four hours after the application of the silver nitrate solution the condition is well in hand. Such treatment is applicable for the abortion of the disease only when the infection is early.

Immunotherapy in Ophthalmology and Otolaryngology.—R. L. Crockett gives brief case histories of a considerable number of infections coming under these classes which have yielded very well to the use of autogenous vaccines after other means of treatment had failed. For the treatment to be applicable the disease must be local; it must be subacute or chronic; it must be due to an organism producing endotoxines; and it must be so located that the antibodies formed will have access to the organism. Finally, one must be sure that he has discovered the organism which is the cause of the disease, as associated organisms may often be present, and their use is without curative effect.

PENNSYLVANIA MEDICAL JOURNAL.

April, 1913.

High Intestinal Obstruction, Postoperative Ileus, and Acute Pancreatitis.—J. E. Sweet reviews some of the experimental studies on animals and the symptoms seen in man in the conditions mentioned and concludes:

> Because the absorption of pancreatic ferments has been shown to be the cause of death in acute hemorrhagic pancreatitis; because the clinical picture of acute obstruction of the upper bowel so closely resembles that of acute pancreatitis; because the loss of the normal function of the adrenals would explain the most striking symptom of these conditions, the collapse and shock, and the adrenals are found to be seriously damaged in intestinal obstruction; because of the relations between the pancreas and adrenals, I conclude that the cause of death in acute hemorrhagic pancreatitis, in high intestinal obstruction, and in postoperative ileus is the absorption of pancreatic products by causing destruction of normal adrenal activity.

He suggests that if this is the case, that is if the underlying cause of these conditions is the destruction of the function of the adrenals by the absorption of pancreatic juice, then the treatment should be by continuous administration by intravenous injection of saline solution containing epinephrin, thus inhibiting the action of the pancreas and supplying the epinephrin which is essential to life.

The Exploratory Opening of the Sphenoid Sinus.—Charles P. Grayson deprecates the common practice of removing a considerable portion of the inferior turbinate bone in order to provide access to the sphenoid sinus. He anesthetizes the nose with cocaine and epinephrin, and punctures the anterior wall of the sinus at its lower and internal portion. In the absence of any obstructive deformity of the upper part of the septum nasi this can be readily accomplished in the vast majority of cases, and no removal of nasal tissue is necessary. This opening has the further advantage of being in the best position for drainage of the cavity. The operation is free alike from pain, hemorrhage, and danger. If the cavity is normal the wound will have closed in twenty-four hours. If the sinus is infected the operation affords the best possible opportunity for making an early and accurate diagnosis and for the employment of suitable measures for local treatment, particularly lavage and drainage.

SURGERY, GYNECOLOGY, AND OBSTETRICS.

March, 1913.

Surgery of the Spleen.—W. J. Mayo discusses the various diseases of the spleen from a surgical standpoint. He says that the leucemic spleen has been removed a number of times, and in practically all of the cases in which the diagnosis was established the patient promptly died as the result of the operation. Even if this were not the case, he says, since the leucemic spleen is but a part of the general condition, splenectomy would be unavailing. At the Mayo clinic splenectomy has been performed eighteen times for splenic anemia with gratifying results. If the disease is uncomplicated, splenectomy may be expected to cure the patient. Perisplenitis may exist to such an extent in association with splenic anemia that the spleen cannot be removed without enormous risk to life. Following splenectomy, there was pain for a time in the long bones in about twenty-five per cent. of the cases, and in one or two cases a temporary enlargement of the lymphatics, evidently a compensatory hypertrophy of the bone marrow and glands.—Franke has collected twenty-nine cases of tuberculosis of the spleen, ten of which were operated in, with seven cures. In chronic malaria with hyperplasia the spleen has been removed with gratifying results. For wandering and movable spleens, splenectomy is to be preferred to splenopexy, as the latter does not always relieve the symptoms and splenectomy is exceptionally easy and safe. Splenectomy is also indicated for cysts and sarcoma of the spleen. Twenty-seven splenectomies have been done at the Mayo clinic, with but two operative deaths.

The Pathology of Splenomegaly; a Study of the Operative and Autopsy Material from the Mayo Clinic.—L. B. Wilson, from a pathological study of eighteen spleens from patients upon whom positive clinical diagnoses of splenic anemia had been made, says that in each spleen there was a hyperplasia of one or more of the constituent tissue elements. In two spleens the lymphoid tissue was so markedly overgrown as to suggest a diagnosis in one of lymphoma and in the other of lymphosarcoma. In three spleens the proliferation of the endothelium of the venous sinuses was most predominant. In thirteen spleens the process was a chronic diffuse one, involving all tissue elements. The writer says that while any case of primary splenomegaly may begin as an overgrowth of the lymphoid tissue or of the endothelium, in the ordinary course of events a secondary overgrowth of the stroma of the gland will later appear, accompanied by degeneration of the lymphoid or endothelial elements. The largest spleens are those in which the lymphoid or endothelial hyperplasia is greatest. As the connective tissue overgrows, the spleen may be reduced in size, the roughness of the exterior being an index to the development of connective tissue within it. The histopathological picture presented in all three types of spleens from cases of primary splenic anemia seems to be in complete harmony with the hypothesis of the presence of a slowly acting local toxine.

The Extended Abdominal Radical Operation for Cancer of the Uterus.—W. Weibel, assistant

to Professor Wertheim, of Vienna, describes the technic of the Wertheim operation as follows: Scraping and cauterizing of the cancer immediately before the laparotomy; incision in the median line; Trendelenburg's position; wide separation of the uterus and vagina from the bladder; tying of the infundibulopelvic and round ligaments; dividing the two layers of the broad ligament. The ureter is to be exposed up to the entrance into the parametrium without isolating it. Here the ureter is crossed and covered by the uterine vessels. The index finger is pushed through the parametrium between ureter and vessels, thereby isolating the uterine vessels, which are now ligated. By this procedure the whole pelvic portion of the ureter becomes so accessible that it is easy now to complete the separation of the ureter. Separation of the rectum from the vagina is the next step. The parametrium is widely excised, after having put on bent clamps for the avoidance of hemorrhage. Two strong right angle clamps are now applied to the already isolated vagina, so that the cancerous tissue is completely enclosed, thereby preventing its coming in contact with the wound after the opening of the vagina. The next step is the removal of the lymph glands. They lie along the common iliac, the external and the hypogastric iliac arteries, and in the trigone between; also downward to the obturator foramen and as high up as the division of the aorta. Cancer has not been found in glands of normal size. The pelvic wound is always drained with iodoform gauze, and the peritoneum carefully closed. From 1898 to 1912, 675 cases of cancer of the cervix were operated upon. At the end of five or more years since the operation, during which eight died from intercurrent disease, of 380 patients, 160 are well and free of recurrence (forty-three per cent.). The primary death rate has been reduced from thirty per cent. in the first hundred to nine per cent. in the last 175.

Rupture of the Uterus.—B. C. Hirst advises the general physician on the subject of ruptured uterus as follows: Cultivate the ability and the habit of making exact diagnoses of the comparative size of fetus and maternal pelvis; estimate the degree of resistance to be overcome and the expulsive power available to overcome it; avoid hasty manual and instrumental interference and methods of extraction that must prove futile; do not delay the application of the appropriate method too long; bear in mind the symptoms of ruptured uterus and the fact that they may be far from distinctive in certain cases; be prepared to put into immediate effect the treatment apparently most suitable to the individual case, whether it be simply gauze drainage or a difficult, complicated major abdominal operation. The writer believes that many cases of ruptured uterus may be saved by gauze packing of the pelvic and uterine cavities. The uterine packing is removed in twenty-four hours, but the pelvic packing is left undisturbed for four days, when it is removed and replaced by fresh gauze. On the contrary, if the rupture is anterior or lateral, if there is much intraperitoneal hemorrhage, if the placenta or fetus has escaped into the abdominal cavity, an abdominal section is required, and most likely a hysterectomy.

Proceedings of Societies.

COLLEGE OF SURGEONS.

Meeting of Organization, Held in Washington, D. C., May 5, 1913.

A meeting of the organization committee authorized and appointed at the Clinical Congress of Surgeons of North America was held at the Willard Hotel, Washington, D. C., May 5, 1913. Dr. Edward Martin, of Philadelphia, acted as chairman, and Dr. Franklin H. Martin, of Chicago, as secretary. The object of the meeting was stated in the language of the following resolution bringing it into existence:

Resolved, That this largest organization of surgeons on the American continent, the Clinical Congress of Surgeons of North America, shall assume the responsibility of standardizing surgery. This should be accomplished through representative committees and along the following lines:

1. It should formulate a minimum standard of requirements which should be possessed by any authorized graduate in medicine who is allowed to perform independently surgical operations in general surgery, or any of its specialties.

2. It should consider the desirability of listing the names of those men who desire to practise surgery, and who come under the authorized requirements.

3. It should seek a means of legalizing under national, colonial, State, or provincial laws, a distinct degree supplementing the medical degree, which shall be conferred upon physicians possessing the requirements recognized by this law as necessary to be possessed by operating surgeons.

4. It should seek cooperation with medical schools of the continent which have the right to confer the degree of M. D. under the present recognized standards, and urge these colleges to confer the supplementary degree of surgeons on such of its graduates as have, in addition to their medical course, fulfilled the necessary apprenticeship in surgical hospitals, operative laboratories, and actual operative surgery.

5. It should authorize and popularize the use of this title by men upon whom it is conferred, and its use should especially be urged in all directories of physicians, in order that the laity as well as the medical man can distinguish between the men who have been authorized to practise surgery and those who have not.

This committee, "with power to act in any manner the committee may deem desirable," began its work by deciding to commit the final decision of the desirability of the method of organization, and the final accomplishment of an organization which would fulfill the spirit of instructions of the congress authorizing the committee, to the strongest representation of surgeons that could be gotten together. The method pursued by the committee to accomplish what seemed at first a hopeless task was familiar to surgeons. The net results of the committee's efforts were that five hundred surgeons of all specialties, representing every large centre of population, every important university city with a teaching faculty of medicine, every special and general society representing a specialty of surgery, all the important surgical clinics and hospitals, besides many independent surgeons from all portions of the North American Continent, have consented to become founders of the organization under contemplation, and of these five hundred fully three hundred were present to fulfill their obligations.

The chairman stated that the object of the meeting was to further formulate and endorse the work that had been done by the subcommittee in regard to the standardization of surgery, for the benefit of the profession and the protection of the public.

The following resolutions were adopted:

Resolved, That the surgeons who were invited to become the founders of this corporation are hereby declared Fellows of the College of Surgeons, and shall receive their election by the Board of Regents without further formality.

Resolved, That such other surgeons in the territorial dominion of the College whose surgeonship can be unquestionably approved by the committee on credentials be at once, without the formality of an examination, rec-

ommended to and received by the Board of Regents as accredited Fellows of the College of Surgeons.

Resolved, That members of the societies of surgeons and surgical specialities holding accredited positions in the federation of societies constituting the Congress of American Physicians and Surgeons shall also be accepted as Fellows of the College of Surgeons without the usual formality required by the Board of Regents.

The following resolutions regarding the selection of Fellows were likewise adopted:

Resolved, That the prospective fellows of the college be divided, for the purpose of classification, into four groups to be designated A, B, C, and D classes, respectively. The A Class shall consist of the founders of the college. The B Class shall consist of the members of the special surgical societies constituting the Congress of American Physicians and Surgeons, and one hundred each, nominated by an accredited committee, from the surgical section of the American Medical Association, from the section of obstetrics, gynecology, and abdominal surgery of the American Medical Association, from the general surgical section of the Clinical Congress of Surgeons of North America, from the surgical specialties of the Clinical Congress of North America, from the American Association of Obstetricians and Gynecolgists, from the Canadian Medical Association, from the Southern Surgical and Gynecological Association, and from the Western Surgical Association. The C Class shall consist of surgeons of prominence of ten years in the practice of surgery or a surgical specialty and who, in the opinion of the committee on credentials, are eligible for fellowship in the college without formal examination. The D Class shall consist of surgeons who cannot, in the opinion of the Board of Regents, be classified under A, B, or C divisions, and for whom the college must establish an examination or other evidence of acceptable qualifications.

Resolved. That the Board of Regents, through the committee on credentials, limit the admission of fellows to classes A, B, and C until the Board of Regents formulates a standard of requirements for Class D and reports the recommendations back to the Board of Governors for approval at a meeting to be called by the Board of Regents at the time of the next meeting in Chicago, November, 1913.

Provisional by-laws were read and adopted, subject to be changed, amended, or substituted for at the next meeting, to be held in Chicago in November.

Election of Officers.—The following officers were elected: President, Dr. J. M. T. Finney, Baltimore, Md.; vice-president, Dr. Rudolph Matas, New Orleans, La.; general secretary, Dr. Franklin H. Martin, Chicago, Ill.; treasurer, Dr. A. J. Ochsner, Chicago, Ill. Board of Regents: Dr. George E. Brewer, New York; Dr. George E. Armstrong, Montreal, Canada; Dr. John B. Murphy, Chicago; Ill.; Dr. Edward Martin, Philadelphia, Pa.; Dr. F. J. Cotton, Boston, Mass.; Dr. Herbert A. Bruce, Toronto, Ontario; Surgeon General W. K. Stokes, of the Navy; Dr. William D. Haggard, Nashville, Tenn.; Dr. George W. Crile, Cleveland, Ohio; Doctor McKechnie, Vancouver; Dr. Charles H. Mayo, Rochester, Minn; Dr. Harry Sherman, San Francisco, Cal.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN PEDIATRICS.

Stated Meeting, Held January 9, 1913.

Dr. HENRY DWIGHT CHAPIN in the Chair.

Remarks Concerning the Need of Psychological Clinics in Connection with the Public Schools.—Dr. L. PIERCE CLARK said that for years there had been a growing discontent in the mind of the thinking public with the slow advance in individual teaching in our public schools, and one of the comparatively new departures to meet this lack had been the recent establishment of ungraded classes for the so called subnormal children. The work in the ungraded classes had been an astonishingly rapid development. In New York city alone to-day there were 152 ungraded classes, caring for over 2,700 pupils of this subnormal type, and it was now estimated that about 7,000 children in Greater New York were in urgent need of these special classes, which for this city alone would require not less than 427 special classes. Did this indicate that feeblemindedness was on the increase in the public schools? No; it meant that we were awakening to the importance of detecting the defects in pupil material of the common schools. There could be no doubt that this defective material of the schools was everywhere; every public school had it. The general usefulness and importance of the work that had already been done in these ungraded classes could not be questioned. The withdrawal of the mentally unfit or deficient child from the normal class was alike beneficial for the normal and the subnormal. While all these pupils were undoubtedly receiving advantages from these special classes, it was the general conviction that the idiotic and imbeciles in this heterogeneous group of subnormal school children needed special institutional training schools and colony homes where proper habits of living and work for the whole day of life might be taught. This hopeless and slightly educable class must be cleared from the schools. In the meantime, while the State was preparing to meet its burden and duty in this respect, there could be no doubt that defective children should stay in these ungraded classes, gaining as much as possible of the special education which had been patterned after the institutional plan of instruction. More exact psychiatric analyses of these high grade defectives in the special classes should be made. The neurotic or nervous child, the child who had day dreams, was too emotional, had night terrors, or suffered from memory or attention defects, was motorially uncontrolled, as shown in tics and habit spasms, or even had more pronounced nervous or mental disease—one which had psychic episodes of excitements or depression, even leading to mild hysterias, phobias, anxiety states, or psychoeleptic crises and even psychic epilepsy itself—should be studied. This group class was the embryo storehouse of the psychoneuroses and the near individualism of latter life. We as physicians of special neurological and psychiatric training should not be slow in recognizing that this was a special field for study in the prevention of the functional nervous diseases. That we should all look upon this special field as the most important to be opened up was his special plea. Still more fundamental should be the study of the makeup of the neurotic constitution which we were agreed was the essential core of the neuroses. It might be just possible, when this nucleus was fully disclosed, that we should find it acted as a Mendelian unit which was just as transmissible as physical defects were now known to be. Out of this neuropathic constitution in its broadest conception flowed the antisocial traits of abnormal child life, such as lying, stealing, truancy, sex perversion, and a host of others. Lest it might be thought that the nervous child was a negligible factor in the schools, he wished to say that it had been estimated that this class formed from five to ten per cent. of all school children. We knew that a great many of these children grew up into healthy men and women in later life. If it had taken years of painstaking study to evolve a comprehensive understanding and training treatment of the frankly defective child, how much more labor there remained for us to perform before we could understand these defective children of the neurotic type. The whole problem of establishing psychobiological clinics was not a new one. Most large cities had them, but they were not an integral part of the school system. The formation of these psychological laboratories was a step in the right direction, but the psychological clinics needed expert psychiatrists and neurologists to extend and make definite a form of psychoanalytic inquiry commensurate with the newer methods in psychiatry. As in the pronounced insanities, the crying need to-day was not in a lot of cases loosely studied, but a few very carefully and exactly analyzed. The reasons for establishing such clinics in the schools were that the latter had the full confidence of the parents of these neurotic children, and that the schools were a "going concern" and could readily incorporate a complete and properly equipped clinic with their other special schools for the blind, deaf, and dumb, and crippled. Such a clinic should have, 1, a definite record of the child's defect and behavior in a false adaptation or lack of progress in the normal school; 2, a careful research of the family life and environment which might be a contributing cause for the nervousness; 3, an intelligence, judgment, will, and ethical test by trained experts, as well as a thorough physical examina-

tion. Then, and not till then, should a prescription of the special school treatment be given. Provision for a follow up record should be made and a reexamination and review of the case should take place after a certain observation treatment had been applied. A system like this called for team work on the part of the trained teacher, psychologist, neurologist, psychiatrist, and sociologist. There was work and honor in such a field of endeavor. It portended much for the future. Such a clinic for the New York city schools was being organized and he trusted it would show some important results in solving the problem.

Etiological Factors in Atypical Children.—This paper by Dr. S. P. Goodhart was published in the Journal for April 12, 1912.

The Mental Defective and Society.—Dr. William Leland Stowell read this paper. He said that by the mental defective he would have understood the feebleminded person. The physician first saw the defective when the family began to realize that the child was not normal. Its defects might be recognized by a failure to grasp objects at the age of six months, a failure to begin walking at the age of one year, to show curiosity or sociability at a year and a half, or to talk at the age of twenty months, and by a continuance of infantile habits beyond the age of two years. At the age of six or seven years the school teacher noted the limitations of such a child. He could not learn the use of objects, could not appreciate form and color, could not tell time or age or count, as the normal child did. If his intelligence never got beyond that of a child of two years he was an idiot; if it reached only that of a child of seven he was an imbecile; if it stopped at the level of a child of ten or twelve years, he was almost up to the standard and was a moron. The feebleminded child could not compete with the normal child because he lacked reasoning power, did not appreciate right and wrong, or the consequences, and was actuated by impulse and suggestion, rather than by design. He lacked imagination, power of initiative, or prolonged application. Such persons had little moral sense and were sexually corrupt. Data carefully collected had enabled us to make a conservative estimate of one feebleminded person to every three hundred normal ones, or 300,000 feebleminded persons in the United States. Thirty thousand of these were in New York State, and less than four thousand of them were in four appropriate institutions. His experience had been gained at Randall's Island where there were now 1,186 aments. They tried to supply a proper environment, to teach the girls domestic employments, and the boys trades and outdoor work. They could not supply gray cells where none existed, and hence the condition was incurable; so that these children should be kept in institutions. The education of the borderline cases had been greatly advanced during the past decade. The special classes maintained by the New York Board of Education now instructed from 2,200 to 2,700 pupils. This was not the work of the public schools, as scarcely one tenth of the children ever rose to the normal grade of these schools. All feebleminded persons should be segregated in institutions where they would have expert physical care and instruction. Adults should be segregated to prevent their becoming parents, and, again, because being unfit to compete with normal beings, they were happiest with their kind. Segregation was especially necessary for feebleminded girls. Most of these girls, if allowed their liberty, became mothers at a very early age. Statistics showed that such defectives were twice as prolific as normal women. The experience of the Salvation Army and the House of Mercy in dealing with prostitutes showed that one third of these girls were feebleminded. The government calmly took the lives of one hundred criminals every year, and yet was slow to prevent these lives beginning. Feeblemindedness was an incurable condition, and not a disease. The condition of the higher grades could be improved by training. They became useful in an institution, but not capable alone. Dr. Caldecot, of Earleswood, had investigated 341 patients who were discharged during fifteen years, and found that 3.25 per cent. were earning wages, 3.81 per cent. were very useful at home, 7.5 per cent. were at home and useful, and the remaining 85.5 per cent. were worthless and should have been taken care of for life. These were all discharged patients supposedly good enough to be out. According to Dr. Wiley the normal average death rate was forty-four years; of 500 cases of defectives and feebleminded studied at Randall's Island, the average age at death was thirteen years. Hence, normal persons lived about three and one half times as long as aments. The mortality tables showed that among the latter deaths from pneumonia and inanition were very numerous, while those from diseases of the vascular system were few compared with the rates for normal individuals. The institutional cost of maintenance for one person was $200 per annum, and the home care would be about the same; so one might calculate that the care of the 300,000 feebleminded in the United States amounted to about $60,000,000 a year. It had been stated that in the Elmira Reformatory thirty-seven per cent. of the criminals were feebleminded. Greater New York's crime bill in 1906 was $35,000,000 and that of the nation $1,075,000,000. If one third of these costs were to be charged to the mental defects of the criminals, the cost of feeblemindedness was certainly very high. If the State could not segregate this class of individuals it should sterilize them. There should be a law that no person in an institution at public charge, who had been properly judged defective, should be discharged therefrom without first being rendered unproductive. Children were not allowed to marry; why allow mental immunes to marry? Asexualization should be regarded just as quarantine, a simple protection against ill to the community.

Dr. Charles L. Dana said that because of the large number of feebleminded among us to-day this was one of the greatest social problems which now confronted us. The feebleminded were a menace to society and an expense to the State, and it was from this stock that considerable proportion of criminals were drawn. The care of the feebleminded should be placed under State regulation, and there should be a State board of control. The feebleminded should be cared for under the direction of this board as the mentally deficient were cared for by the State Commission on Lunacy. Such a board of control should have a census made of the feebleminded, and should establish a bureau of records. The life history of these children should be kept. Before school age the children should be under the care of their parents; after that they should be under the supervision of the State. During the years they were of school age they should be under the care of the Board of Education, but also under the supervision of the State Board of Control. When proved unfit for school work they should be placed in institutions. After passing the school age, when they became most dangerous to society, they should be under State control. During the process of growth some of this class became useful citizens and were able to care for themselves. During the time that such a plan was developing we must go on doing the best we could, and the Board of Education could be of great help. The State Board of Charities recognized this work, and was prepared to more than double the present accommodations in the different State institutions. Perhaps in a short time they would be able to care for fourteen or fifteen thousand of these children, instead of four or five thousand, as at present.

Dr. Charles H. Andrews, of Buffalo, said that we might all believe in the segregation of defectives, but of what use was this measure under the law as interpreted by the attorney general? When a child was able to do anything useful he could be taken out of an institution by his parents or grandparents, and what was the result? A boy who happened to be a firebug might destroy any buildings, or a girl who was weakminded might fall prey to those always looking for such girls. One young girl had gone home from an institution for a three weeks' visit, and when she came back was found to be pregnant by her own brother; this was only one of many similar instances that might be related. What was the use of increasing the number of institutions for the feebleminded if the number of this class increased more rapidly than the accommodations? It was not definitely known what the State of New York would do in regard to sterilization, but records and family histories should be kept, and if the courts approved sterilization might be performed according to the law. Just how soon this was to be done was unknown, but the authorities should be willing to receive suggestions along these lines.

Dr. B. Sachs said that in his opinion no great advances toward the utopian state would be made by asexualization. It was well to adhere to the tangible phases of the ques-

tion. He would like to say a word about the higher class of defectives. There always were a larger number of these children than we realized. These higher defectives were not proper subjects for care on the part of the State. They were often the unfortunate victims of insanitary and unhealthy environment. After thirty years of study he was not ready to give any conclusions as to whether these slightly defective children were developed as the result of heredity or chiefly from the results of insanitary surroundings. Much could be done by the relatives, the teachers, and the family in efforts directed toward the improvement of the mental condition of such slightly defective children. The environment of the family was a great factor; an unhealthy home atmosphere, unrest, discontent on the part of the mother, and general preoccupation on the part of the father contributed more to the development of the defective child than assumed hereditary factors. There had been a great hue and cry at times against our educational system, but he wished to go on record as saying that there was no one power or force in any American community that tended so clearly toward the prevention of defective and nervous children as did the healthy restraining influence of the average school; the school was the safeguard in the entire social makeup. The schools were excellent places for discipline, and this was the one force that appealed to him in the improvement of the condition of the defective child. The Section in Pediatrics could do an excellent work by pointing out to the Board of Education the absolute necessity of giving to these children such instruction as they could. Defective children should not be in classes with normal children, neither should all defective children be in the same class, as defective children differed greatly in the degree of their abnormality. There should be special schools for defectives, with a series of ungraded classes. We should continue to advocate a system of education for the training of these higher defectives, as many of them became useful citizens. The complete imbeciles and the seriously defective children should be entrusted to the care of the State.

Dr. Max G. Schlapp said that Dr. Sachs was probably referring to feebleminded children when he made the statement that a large percentage of such children could be educated and become useful members of society, but this assertion was not borne out by the facts. In looking over the reports of an institution where this sort of work was carried on he had observed that only a very small percentage of the feebleminded were ever capable of doing any good work or of becoming self supporting. The most serious factor in the problem was the welfare of the community. These children were, without exception, potential criminals; they could easily be led into all sorts of things. Most of them were sexual imbeciles, and time and again they would mislead the normal child. Dr. Stowell had stated that this condition was not a disease. He would like to ask Dr. Stowell whether he considered syringomyelia a disease; whether Basedow's disease, myxedema, Addison's, and similar affections were diseases? Were they not due to some disturbance of the internal secretions? These were the conditions to be found as causes of feeblemindedness. If we considered such conditions as diseases we must consider feeblemindedness a disease. It was the duty of the State to take these people out of the community and place them in institutions where it might be possible to determine the nature of the condition and to get some prophylactic which would prevent its spread. Idiopathic feeblemindedness was due to some disturbance of the internal secretions, though this might not be the only cause.

Mr. Angus P. Thorne, of the Department of Public Charities, New York City, said the most important thing was for the State to adopt some definite policy for the care of the feebleminded, and he believed that the State of New York was practically committed to a definite policy of segregation. At present the State Board of Charities had supervision over all institutions devoted to the care of the feebleminded. He did not agree with Dr. Dana that a State board of control was necessary. If the State would provide the means the State Board of Charities could handle the work. The most important thing in the study of this work should be a scientific investigation which should be undertaken to find out the causes underlying feeblemindedness; not investigations covering one or two months, but a period of years. There was no good reason why the city of New York should support feebleminded persons when their relatives were able to do so. The Randall's Island institution was intended primarily for the indigent, and where an inmate or his relatives were able to pay, in full or in part, for his maintenance, the commissioner of Charities was empowered to collect such a sum and turn it over to the city chamberlain once a month. It was desirable to get all agencies in the city interested in the problem of the feebleminded, and then data could be collected which would be of value and would stimulate the authorities to make better provision for this class of dependents.

Miss Elizabeth E. Farrell, inspector of ungraded classes, Department of Education, New York city, said that in caring for feebleminded children the schools were not doing a new work, but merely adapting their instruction to individual needs. The school authorities had promoted the idea of adequate institutional care for a large number of children in the schools who never could be self supporting and who ought never to be allowed to take a place, however small, in our highly organized city life. The medical inspection of children in the ungraded classes was such that we knew with a fair degree of accuracy the progress made by the children from year to year. When the time was ripe the parent was advised to make application for the admission of the child to an institution if he did not progress properly. Not one parent in ten followed the advice. As things were at present, the parent alone could secure institutional care for the child. As soon as the public understood that we had in the schools of this city children who would need supervision as long as they lived, we would have adequate room and some sort of legal procedure for transferring such individuals to farm colonies. The schools did not want the idiots and imbeciles, but the wisdom of turning them on the streets was questionable. The work which the school really wanted to do, and which it would do as soon as it was relieved of the children who needed custodial care, concerned the high grade defective child who might by proper treatment, medical and educational, be prepared to take a place in the life of the community. They wanted the physicians of the city to regard the schools as laboratories; they wanted to gather such records of school children as would help them in understanding the pitiful cases of psychoses that come to them for intelligent sympathy and help. The time for arguing whether or not the mentally defective child was the concern of the public school was past; we must care for him until society realized its duty to itself and its obligation to the weak.

Mr. Hibberd, ex-commissioner of Charities, New York city, said that the statement made by Van Wagenen, and the reports from the Carnegie Laboratory, as well as from Washington, confirmed this, that there were 400,000 mental defectives in the State of New York, and of this number about 30,000 were idiots, imbeciles, and low grade defectives. This State could never segregate such a large number, but it should care for the low grade cases. At the present time, in New York city, six of the twenty thousand defectives were under public care, being paid for by the State or the various local authorities in the State. They wished to keep these people out of the State, and were trying to help Ellis Island to accomplish this. A feebleminded person with an inherited defective strain was more of a menace to the community than an insane person. We needed most of all that public spirit which would help institutions to get money to enlarge their facilities, so that a large number of these defectives could be cared for. New institutions were especially needed in the western part of the State. It seemed better to avoid these boards of control, as politics were liable to enter into them. We needed some change in the law; it was quite easy to get a person sent to an institution, but it was often very difficult to keep him there. The reformatory was no place for the defective as he was not benefited himself and interfered with the discipline of the institution. This was a subject to which the Section in Pediatrics did well to turn its attention. It, together with the Department of Education and the Department of Charities, should work together in this matter.

Dr. Clark said he did not think all of these children had criminal potentialities. The economic side of this question was an important one. His opinion in regard to a board of control agreed with that of Mr. Hibberd. We

should have a census of these feebleminded persons in order that we could know where they were.

Dr. GOODHART said that the most important class with which we had to deal was that of the high class defectives. They did not require institutional care, and might be a most valuable asset to society, since among them might be found those possessed of special aptitudes, even of a high order. Unless they were recognized early and trained properly they might become truly defective. Feeblemindedness was in some cases a disease in that it might be dependent upon a demonstrable pathological lesion in the brain; it was always a condition affecting social and economic problems.

Dr. STOWELL said that in regard to feeblemindedness being a disease he disagreed with Dr. Schlapp. The Board of Education should have charge of all teaching of normal or abnormal children; but the feebleminded should be taught in institutions. The State must realize that accommodations must be provided for many times the number of feebleminded now cared for.

Letters to the Editor.

THE AMERICAN MEDICAL ASSOCIATION OF VIENNA.

VIENNA, *April 23, 1913.*

To the Editor:

In reading the JOURNAL of April 5th I was very much surprised to find such valuable space taken up with an article entitled Vienna Caustic, which, although very amusing in some parts, is very untrue in others. It is not the purpose of the writer to answer Doctor Maverick by refuting any of his statements concerning the darker side of Vienna social life, the knowledge of which he seems to possess in a marked degree. On the other hand, I cannot believe, judging from the American physicians I have met here during the past year, that all of the men present here in 1908 were here for pleasure, as the gentleman from Texas would have us believe. My purpose is rather to show that the work in Vienna is not only in "the hands of minor professors, docents, and assistants," but is also in the hands of some of the world's greatest teachers.

Doctor Maverick mentioned a long list of names (Zuckerkandl, Weichselbaum, von Noorden, Fuchs, Chiari, and others), which he terms "the cream of Vienna medicine." Continuing, he writes, "How many of these lecture to American students? None. Sad, but true."

This statement is absolutely untrue and without foundation. Americans, and good, earnest Americans, here to work, and not to spend their time in cafés, are always to be found in the clinics of the above named men in great numbers. *The Bluebook of the American Medical Association of Vienna* gives a list of all the courses, which are recommended to the men coming here to study, such courses having been arranged for by the association. Perusal of the book will show that the above named men give courses open to the members of the association. In the eye, ear, nose, and throat department practically all of the work is given in English, and in very good English. A knowledge of German is requisite to enable a man to get the best work in other lines, but the majority of the men who come here for such work have a good working knowledge of German. Still, there is splendid work for men who know but very little German but are here to work. And how the men do work!

I have never met a more earnest body of physicians devoting so much time and energy to their work as the American physicians doing postgraduate work here in Vienna. Doctor Maverick graced Vienna with his appearance on May 18, 1908, and became a member of the American Medical Association of Vienna. The date of his departure is not certain, for, although members are requested to give notice of their departure, he left very suddenly and, as far as I know, has never been heard of again until April 5, 1913, when he looms up with reminiscences of five years ago. I trust you will give space to this communication in your valuable journal, more to uphold the reputation of the American physicians here than to exploit the postgraduate work of Vienna.

J. J. COHANE, M. D.,
President of the American Medical Association of Vienna.

VIENNA CAUSTIC.

507 BEDELL BUILDING, SAN ANTONIO, TEXAS, *May 9, 1913.*

To the Editor:

In looking over the proof of Doctor Cohane's answer to my article on Vienna Caustic it makes me sad to think that a man dignified by the position of a presidency should absorb so little of what he reads. If he had read my article carefully he would have found that I said the *majority* and *not all* the American physicians in Vienna wasted their time. I could not very well say all because I was there myself. When I wrote that men like von Noorden did not lecture to Americans I added that "anyone can mingle with the Vienna undergraduates and attend the clinics of these professors, but what he hears is purely elementary, intended only for the ears of beginners." Doctor Cohane cannot mention any of these leading Vienna men as holding postgraduate clinics for Americans alone. The Bluebook of the American Medical Association of Vienna, which I must confess once contained my name as one of the officers of the association, is very unreliable, because it gives the names of the higher professors and makes the prospective student think that these men give special lectures to Americans, when in reality their courses are really all university courses for undergraduates. The only absolutely reliable information I can find in my copy of the bluebook is in the advertising section, where it says that a certain café sells excellent beer. Doctor Cohane furthermore overlooked the fact that I also had mentioned that in eye, ear, and throat work there were some good lecturers who used English—certainly in no other line of work.

There is no necessity for me to withdraw anything I said in my article; Doctor Cohane does not tell me anything new. The numerous letters I have received from physicians all over the country, who have been in medical Europe, endorsing what I wrote, convinces me that I did not make the dose too strong, even though it proved a little hard to swallow. It certainly pleases me to learn that the American physicians in Vienna at the present time are all sober and industrious. No doubt they will soon be singing hymns and wearing green carnations. The fact that Doctor Cohane finds no trace of me since the time I came to Vienna is not because I have been in jail, as he evidently infers. In fact I stayed in Vienna almost a year and a half, leaving there the latter part of 1909, only a little more than three years ago. I can assure the honorable president of the Medical Association of Vienna that when I left Vienna I did not leave very suddenly, but went on board the Constantinople express, which has never been known to exceed the speed limit. The question as to whether I left Vienna suddenly or not has nothing to do, I hope, with the postgraduate work in Europe. Possibly when Doctor Cohane awakens some blue morning, and sees a vision of the statue of Liberty and the skyline of old Manhattan floating before his eyes, he will leave suddenly himself.

My compliments to Doctor Cohane for whom personally I feel the greatest respect. He would be a poor skipper who did not stand by his Titanic, and this Doctor Cohane so faithfully does.

AUGUSTUS MAVERICK, M. D.

Book Reviews.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

A Manual of Auscultation and Percussion. Embracing the Physical Diagnosis of Diseases of the Lungs and Heart and of Thoracic Aneurysm and of Other Parts. By AUSTIN FLINT, M. D., LL. D., Late Professor of the Principles and Practice of Medicine and of Clinical Medicine in the Bellevue Hospital Medical College, etc. Sixth Edition, Revised and Enlarged, by HAVEN EMERSON, A. M., M. D., Associate in Physiology and Associate in Medicine, College of Physicians and Surgeons,

Columbia University, etc. Illustrated. Philadelphia and New York: Lea & Febiger, 1912. Pp. viii-36.

The sixth edition of Flint's widely known manual abundantly justifies itself. Well written, without useless verbiage, the author makes a valuable contribution in Chapters II and IV, in dealing, respectively, with Percussion in Health and Auscultation in Health, while in Chapters III and V, Percussion in Disease and Auscultation in Disease are considered. Normal physical findings are so often left to the student to acquire as best he can, or he is assumed to know it all, and only the pathology is dealt with. Likewise, the author deals with Physical Conditions of the Heart in Health and Disease. Two new chapters have been added to the present work, dealing with the Abdominal Viscera and the Nervous System. These are brief but succinct, and will repay close study. The work concludes with a mere outline sketch of the accessory methods of physical examination and then a systematic plan for making a careful physical examination is submitted. It is the opinion of the reviewer that if every doctor carefully followed such a plan, comparatively few errors in diagnosis would occur, the profession would be saved much opprobrium, and fewer neurasthenics and valetudinarians would be created.

Diseases of the Stomach and Upper Alimentary Tract. By ANTHONY BASSLER, M. D., Professor of Clinical Medicine, New York Polyclinic Medical School and Hospital, Chief Gastroenterologist to the German Poliklinik, etc. Second Edition, Revised and Enlarged. Illustrated with Numerous Half Tone and Line Text Engravings, and 75 Full Page Half Tone Plates Plain and in Colors, from Original Photographs and Drawings. Philadelphia: F. A. Davis Company, 1913. Pp. xviii-870. (Price, $6.)

The second edition of Doctor Bassler's book is a pronounced amplification and improvement on the first. It is now a complete treatise on diseases of the stomach and upper digestive tract. The makeup is most creditable to both author and publishers, containing as it does 870 pages octavo, six inches by nine and one eighth inches, on Kotine paper, on which half tone pictures are readily reproduced, making a compact and easily handled book. Illustrations are numerous: Seventy-five full page half tone plates, plain and in colors, from original photographs and drawings. These afford excellent mental visualizations of clinical procedures and pathological phenomena. The volume compares favorably with others on similar lines, and constitutes a thorough presentation of modern advances. A word must be said in commendation of the author's style. Few medical writers realize how much the integrity and acceptability of the most finished, scientific, and illuminating treatment of a subject is jeopardized by heavy, tedious, involved phraseology. Each chapter and subchapter begins with a clear, succinct presentation of the subject matter to be discussed. The reader is thus led insidiously and pleasantly to the end. No pains are spared to give a comprehensive, practical conception of the stomach and gastroenteron, their maladies and treatment. Individual opinions expressed and personal methods advocated are temperate, wise, and in accord with the best knowledge in this and collateral domains. Certain chapters prove interesting reading to the general practitioner and to specialists in other lines, notably those on organic diseases of the stomach, splanchnoptosia, and the contributions of surgery to internal medicine.

Golden Rules of Surgery. Especially Intended for Students, General Practitioners, and Beginners in Surgery. By AUGUSTUS CHARLES BERNAYS, A. M., M. D., Heidelberg, M. R. C. S. England, Chief Surgeon of the Lutheran Hospital and for Twenty Years Professor of Anatomy and Surgery in St. Louis, Mo. Second Edition. Revised and Rewritten by WILLIAM THOMAS COUGHLIN, M. D., Assistant Professor of Surgery, St. Louis University Medical School. St. Louis: C. V. Mosby Company, 1913. Pp. 281.

This small book is intended for students, general practitioners, and beginners in surgery. The complete exhaustion of a large first edition demanded the present issue. The work teems with helpful points and advice based on thirty years' experience in surgery. If it is carefully read many common errors in the practice of surgery will be avoided. The style, consisting of short positive statements, is impressive and conveys to the reader the conviction of authority. The book has a distinct purpose not fulfilled by the ordinary surgical works, inasmuch as it brings together in a compact form rules of procedure and warnings which one would have to search for perhaps in vain through several textbooks. Furthermore, it brings home to the beginning operator, in a clear manner, valuable information relating to practical points of technic and common pitfalls. For the young operator to be left to find out these things for himself means often misfortune for the patient.

Malaria. Cause and Control. By WILLIAM B. HERMS, M. A. Assistant Professor of Applied Parasitology, University of California, etc. Illustrated. New York: The Macmillan Company, 1913. Pp. xi-163. (Price, $1.50.)

Although the material presented in this volume is based on nearly four years of practical study of malaria in California, it, nevertheless, can be applied to any locality where this disease exists. It is full of most valuable advice and contains many suggestions that are indeed most practical. The life histories of the malarial organism and of the mosquito carrier are reviewed, means of control are explained, the methods of crusade are outlined, and numerous statistics give the cost of such procedures. This book should be most useful and can be highly recommended to those living in regions where malaria is found.

The Individual in the Animal Kingdom. By JULIAN S. HUXLEY, B. A., Research Associate of the Rice Institute, Houston, Texas, Late Lecturer of Balliol College, Oxford. New York: G. P. Putnam's Sons; Cambridge: University Press, 1912. Pp. ix-167. (Price, 40 cents.)

If the objects of medical culture should include forms of agreeable recreation while losing no time in absorbing information, if also they should embrace stimulation to literary style, then here is a little volume which furnishes all this. That it is highly important for the practitioner to learn what manner of creature man, "Homo sapiens" (Linnæus) really is, where he stands not only in the phylogenetic scale but so much of his characteristics as shall reveal how to estimate his place in the animal kingdom, his individuality, his personality, his human attributes, there can be no doubt. These be the strings of the harp of life on which the conservator of health shall play. Let him read this product of the younger Huxley not once but, as the reviewer hopes to do, oftener. It is good science, it is rare philosophy, couched in charming phrase, rich in literary allusion in classic metaphor, brief, clear, made easy of comprehension by touches of that imaginative quality so wisely recommended to scientists by the elder Huxley.

Disease in Milk. The Remedy, Pasteurization. Compiled by LINA GUTHERZ STRAUS. Pp. 221.

This collection of papers, essays, and addresses written by Nathan Straus, is a splendid testimonial of the life work of this rich philanthropist. Whether right or wrong—that is not to be discussed here—it must be admitted that Mr. Straus has at least tried to help man in his fight against the white plague, and he would not have found a more friendly coworker than his wife, Mrs. Lina Gutherz Straus, who has collected and published these papers.

A Manual of Immunity. For Students and Practitioners. By ELIZABETH T. FRASER, M. D. (Glas.), Late Assistant Bacteriologist, Glasgow Royal Infirmary, etc. Glasgow: James Maclehose & Sons, 1912. Pp. x-199. (Price, 5s.)

The author rightly concludes that, owing to the almost wanton introduction of new terms, the science of immunity has acquired an aspect of complexity which may well suffice to scare the busy general practitioner from any attempt to study the subject. He deems it the most living branch of medicine, instancing serodiagnosis, vaccine, and serumtherapy, and the Widal and Wassermann reactions as proofs that the physician can no longer remain a mildly interested looker on. Hence the purpose of the book, to furnish the practitioner and student a clear and concise review of the subject, one deprived as much as possible of intricacies and unusual terms. He has succeeded admirably, and the reader may without being submitted to the overpowering fatigue which most works impose, obtain

an excellent idea of the structure and properties of the fluids such as the antitoxines, agglutinins, etc.; the cells, phagocytes, etc.; the microorganisms; the immunity reactions such as serum and vaccine therapy; those employed for diagnostic purposes, the Widal, Wassermann, and other reactions; anaphylaxis and chemotherapy. A convenient glossary is also furnished, the book closing with an excellent index. On the whole, Doctor Fraser's little book is a most satisfactory one.

Meetings of Local Medical Societies.

Monday, *May 19th.*—New York Academy of Medicine (Section in Ophthalmology); Medical Association of the Greater City of New York; Elmira Clinical Society; Hartford, Conn., Medical Society.

Tuesday, *May 20th.*—New York Academy of Medicine (Section in Medicine); Buffalo Academy of Medicine (Section in Obstetrics and Gynecology); Tri-Professional Medical Society of New York; Medical Society of the County of Kings; Binghamton Academy of Medicine; Syracuse Academy of Medicine; Ogdensburgh Medical Association; Medical Society of the County of Westchester; Psychiatric Society of Ward's Island; Oswego Academy of Medicine.

Wednesday, *May 21st.*—New York Academy of Medicine (Section in Genitourinary Diseases); Northwestern Medical and Surgical Society of New York; Woman's Medical Association of New York City (Academy of Medicine); Medicolegal Society; Buffalo Medical Club (annual); New Haven, Conn., Medical Association; New Jersey Academy of Medicine, Jersey City.

Thursday, *May 22d.*—New York Academy of Medicine (Section in Obstetrics and Gynecology); Hospital Graduates' Club; New York Celtic Medical Society; New York Physicians' Association; Bronx Medical Association.

Friday, *May 23d.*—New York Academy of Medicine (Section in Public Health); Academy of Pathological Science; New York Society of German Physicians; New York Clinical Society; Manhattan Medical Society; Italian Medical Society.

Saturday, *May 24th.*—West End Medical Society; New York Medical and Surgical Society; Harvard Medical Society, Lenox Medical and Surgical Society.

Official News.

United States Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending May 9, 1913:

Banta, William P., Captain. Granted two months and fifteen days' leave of absence on arrival in the United States. **Brooke,** Robert, Major. Granted two months' leave of absence. **Brooks,** W. H., Major. Granted one month's leave of absence about May 7th, with permission to apply for an extension of three months. **Bushnell,** George E., Colonel. On leave of absence, will report to the surgeon general of the army for temporary duty. **Fauntleroy,** Powell C., Major. Relieved from duty in Washington, D. C., and will report to the commanding officer at Fort Monroe, Va., for duty, upon expiration of leave of absence. **Kramer,** Floyd, First Lieutenant. On arrival in San Francisco, will report to the superintendent of the Army Transport Service for duty in connection with transport duty in that city. **Manly,** C. J., Major. Granted one month's leave of absence, about May 7th. **Quade,** Omar H., First Lieutenant. Left Fort Snelling on May 4th on sick leave of absence for one month. **Schreiner,** Edward R., Major. Orders have been amended so as to direct him on the completion of his present course of instruction at the Army Service Schools, Fort Leavenworth, Kansas, to proceed to Boise Barracks, Idaho, for temporary duty and upon completion of that duty to proceed to San Francisco, California, and take the first available transport for the Philippines, and upon arrival in Manila to report to the commanding general, Philippine Department, for duty.

Each of the following named medical officers on arrival in the United States will report to the commanding officer of the posts named after their names, for duty: Captain Henry C. Coburn, Jr., Ft. Douglas, Utah; Captain Theodore Lamson, Ft. Flager, Washington; Captain James D. Heysinger, Fort Casey, Washington; Major H. G. Shaw, Fort Banks, Massachusetts; Captain John W. Hanner, Letterman General Hospital, Presidio of San Francisco; Captain John B. Huggins, Ft. Robinson, Nebraska; Captain E. B. Vedder, will proceed to New York city, and take station at that place for the purpose of a course of instruction at the Rockefeller Institute; Major R. U. Patterson, to Washington, D. C., and assigned to duty with the American Red Cross; First Lieutenant E. F. Haines, Medical Reserve Corps, Ft. Leavenworth, Kansas, for duty with United States Military Prison; First Lieutenant T. W. Penrose, Medical Reserve Corps, to Fort D. A. Russell, for duty.

United States Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending May 10, 1913:

Alfred, A. R., Surgeon. Detached from the Receiving Ship, Mare Island, Cal., and ordered to the Proving Grounds, Indian Head, Md. **Angeny,** G. L., Surgeon. Ordered to the Navy Recruiting Station, Richmond, Va. **Cather,** D. C., Passed Assistant Surgeon. Detached from the *Vermont* and ordered to await orders. **Hart,** S. D., Assistant Surgeon. Ordered to the Atlantic Reserve Fleet. **Lyon,** W. C., Assistant Surgeon, Medical Reserve Corps. Detached from the Navy Recruiting Station, Richmond, Va., and ordered to the Navy Recruiting Station, Galveston, Texas. **Stoops,** R. E., Passed Assistant Surgeon. Detached from the Naval Hospital, Great Lakes, Ill., and ordered to the Naval Training Station, Great Lakes, Ill.

Births, Marriages, and Deaths.

Married.

Galster—McLeod.—In New York, on Wednesday, April 30th, Dr. Henry C. Galster, of Hudson, N. Y., and Miss Katherine B. McLeod. **Schneller—Johnson.**—In Freeland, Pa., on Wednesday, April 30th, Dr. John S. Schneller, of Catasauqua, Pa., and Miss Kathryn Johnson.

Died.

Barr.—In Burlington, N. J., on Monday, May 5th, Dr. Benjamin Barr, of Philadelphia, aged eighty-five years. **Claiborne.**—In New Roads, La., on Monday, April 28th, Dr. Ruffin C. Claiborne, aged thirty-three years. **Coggin.**—In Salem, Mass., on Wednesday, May 7th, Dr. David Coggin, aged seventy years. **Du Bois.**—In Hudson, N. Y., on Tuesday, April 29th, Dr. John C. Du Bois, aged eighty-one years. **Duhring.**—In Philadelphia, on Thursday, May 8th, Dr. Louis Adolphus Duhring, aged sixty-seven years. **Eastman.**—In New York, on Monday, May 5th, Dr. Robert Watts Eastman, aged sixty years. **Edwards.**—In Grand Rapids, Mich., on Thursday, May 1st, Dr. Pembroke S. Edwards, aged seventy-six years. **Fell.**—In Wilkes-Barre, Pa., on Thursday, May 1st, Dr. Alexander Gray Fell, aged fifty-two years. **Ingalls.**—In East Kingston, N. H., on Sunday, May 4th, Dr. George Hancock Ingalls, aged fifty-three years. **James.**—In Medina, N. Y., on Sunday, May 4th, Dr. John Theron James, aged fifty-two years. **Lundy.**—In Portage la Prairie, Canada, on Sunday, April 27th, Dr. John Lundy, aged thirty-eight years. **Mead.**—In Ocean Grove, N. J., on Tuesday, May 6th, Dr. Charles Henry Mead, aged seventy-two years. **Moore.**—In Brunswick, Tenn., on Tuesday, April 29th, Dr. L. Roy Moore, aged thirty-five years. **Myers.**—In Bennett, Neb., on Tuesday, April 29th, Dr. Evans M. Myers, aged thirty-seven years. **Prichard.**—In Harrisonburg, La., on Tuesday, April 29th, Dr. Charles C. Prichard, aged fifty-eight years. **Shepard.**—In Burlington, Pa., on Saturday, April 26th, Dr. Ernest W. Shepard, aged forty-two years.

New York Medical Journal

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Original Communications.

NITROUS OXIDE GAS, ESSENCE OF ORANGE ETHER, AND SEQUESTRATION IN GENERAL ANESTHESIA FOR OPERATIONS IN THE UPRIGHT POSITION.*

Demonstration of the Latest Model of Chair Table.

BY THOMAS R. FRENCH, M. D.,
New York.

The reception accorded the method of operating in the upright position, which was described at the last meeting of this association, must serve as an excuse, if excuse is needed, for our coming before you again to present some facts which, in part at least, have been evolved in the past year. We expressed our belief, a year ago, that through the upright position alone more skillful operative work could be done, that less blood was lost, and that less ether was required than in other positions.

We are now able to state, as a result of the effects of the movements of the new operating table and also as a result of the tests made, in our clinic in the Long Island College Hospital, of various methods of general anesthesia, in the past season, that operative work in the upright position can be done with still less loss of blood, with the need of still less of the anesthetic, and with less disagreeable conditions during recovery from the anesthesia.

The most pronounced effects of the smooth, gliding, jarless movement of the chair table, even when the older methods of anesthesia were employed, have been a noticeable diminution in the loss of blood and a more satisfactory recovery from the anesthesia. This would seem to show that sudden changes in position or sudden disturbances of the body, while the patient is under the influence of a general anesthetic, predispose to shock, the effects of which are manifested both during the operation and during recovery from the anesthesia. After careful study of this phenomenon we became so much impressed with the value of an elevation of the body from the recumbent to the upright position, for all ages of patients, without jarring, that we had the chair table remodelled to make it possible to accommodate, from the beginning, the most diminutive of children, in order to avoid the disturbance of nervous or circulatory equilibrium which was, apparently, caused, in such cases, by the lifting of the body, by hand, to place it upon folded blankets so that the head could be raised to the level of the headrest. By the aid of the new attachment (Fig. 1)[1] all the movements of the body are now made with as great a freedom from jarring and disturbance of balance, with infants and very small children, as has, heretofore, been possible only with larger children and adults; the resulting improvement in conditions leaving no doubt of the accuracy of the observation. Although, of course, we were not conscious of it during the years in which we used the ordinary chair, we believe now that the movement of lifting the patient from the table, or bed, to the chair, the jar and jolt of adjusting the body to the seat and back, and the almost unavoidable jarring in bringing the chair to the upright position, gave rise to nervous disturbances; for in no other way can we explain the improvement in the condition of the patient during and after operation since the advent of the chair table. Our full year's experience with this instrument of precision has provided a sufficient basis for the statement that smooth, jarless elevation of the body, without other disturbances than are absolutely necessary to bend the body from the supine to the sitting posture, must be accepted as of fundamental importance in obtaining ideal results from operations in the upright position.

The other experiences which, in outline, we wish to describe (and this must be regarded as only a preliminary report) are especially in reference to two methods of general anesthesia. They are: 1. Nitrous oxide gas or essence of orange ether sequence, with, for the present, just a few words in regard to the use of ether vapor; and, 2, nitrous oxide gas or essence of orange ether sequence with sequestration of the limbs. At the outset it must, of necessity, be stated that the observations which follow are mainly from the standpoint of the surgeon, and, therefore, not altogether that of the anesthetist.

THE NITROUS OXIDE GAS OR ESSENCE OF ORANGE ETHER SEQUENCE METHOD.

In describing the new upright method last year we said: "The method consists in placing the patient upon the table for anesthetization in the recumbent position, and when the stage of excitement has passed, in converting the table into a chair and bringing the body to a sitting position." In the light of the revelations made in the anesthetic tests of the past season, the statement of the acceptance of the stage of excitement as if it were

*Read before the American Laryngological Association, Washington, May 6, 1913.

[1] Figs. 1, 3, and 4 show the most important improvements made in the chair table in the past year.

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unavoidable, looked, when we saw it again recently, like ancient writing, so strongly have we been impressed, generally speaking, with its needlessness and harmfulness.

One of the most important and valuable recent contributions to anesthesia methods is the ability to omit, or bridge, the second stage, or stage of excitement, and, judging by the results obtained, we are deeply impressed with the desirability of attaining narcosis without struggle. This can, without doubt, be accomplished, in the period of induction, with nitrous oxide gas; but, in our judgment, it can be done with greater ease and certainty with the essence of orange. It, unquestionably requires a large experience with the administration of nitrous oxide gas to enable one to dovetail it so accurately with the ether which follows that the stage of excitement will be eliminated. It can, however, be done, and when done successfully, if all other things are equal, we can safely predict the best prospect for the operation and the best condition during recovery.

The discoverer of the remarkable effects of the essence of orange as a preliminary to ether, Dr. James T. Gwathmey, of New York, has demonstrated its possibilities in our clinic, and has proved to our satisfaction that, with it, the administration of ether is made far less disagreeable and that it greatly assists in the reduction of shock by bridging the stage of excitement. We have seen the inventor of this method use it repeatedly with perfect success, the patients sinking into complete anesthesia as a child falls to sleep. Our observations thus far have brought the belief that an anesthesia conducted in that way up to the time of raising the body to the upright position, is a contributive factor in reducing hemorrhage, also in reducing the quantity of the anesthetic and in shortening and modifying the anesthetic aftereffects.

In the testing work in anesthesia, more particularly that carried out during the past season, the writer has had foremost in mind the great need of reducing shock. It is generally conceded that the child is more susceptible to shock than the adult, due, in some way, no doubt, to the fact that the child is anatomically and physiologically different from the adult. The tests have, therefore, been applied especially to children in the controlling of hemorrhage and in the administration of anesthetics. We find no variance from the belief among surgeons who have given careful thought to their work upon infants and children, that the losing of blood is a matter of the greatest import to them and that all means should be used to prevent hemorrhage in operating upon them. And we are now convinced that shock from the loss of blood and from the anesthetic can be materially reduced by the *manner* of administering the anesthetic.

According to the observations of the writer of this paper there is, irrespective of all other conditions, a well defined and never failing relationship between the degree of skill in which a patient is anesthetized in the upright position and the amount of hemorrhage which occurs during the anesthesia, for there seems to be no question but that hemorrhage is reduced if the anesthetic, from the beginning, is smoothly administered, the second stage omitted, and the patient brought into full surgical anesthesia without jarring or body disturbance of any kind. The uniform employment of helpful mental suggestion by every individual in contact with the patient up to the time of the induction of anesthesia, to assist in preventing an excessive discharge of nervous energy through fear—which is one of the elements in the "anoci association" of Crile; the administration of morphine to patients who display a marked degree of apprehension; an anesthetizing room free from an atmosphere of excitement and from unnecessary noise; the preliminary use of nitrous oxide gas or the essence of orange and the drop method of ethylchloride, ether, and chloroform, followed by the drop method of ether with an open inhaler and later with an Allis inhaler, will insure, at the hands of a competent anesthetist, the prolongation of the anesthesia after the body reaches the upright position, a reduction in hemorrhage and also reduction in the disagreeable sequelæ.

We have found the closed method of administering ether vapor, or, more properly speaking, ether insufflation, devised by Dr. William C. Woolsey, of Brooklyn, of great value in maintaining anesthesia in long operations. It must be remembered that anesthesia is maintained, for a time at least, after the body has been raised to the upright position, by the position alone. If the induction has been satisfactory the anesthetic not only should be but, in most cases, must be diminished in quantity, or withdrawn, as soon as the upright position has been attained, to prevent the narcosis from becoming too deep for safety. When the reflexes begin to reappear the anesthesia can be continued by the occasional administration of the vapor through the mouth. (We exclude the nasal method, at least for the present, for it is still a question in dispute as to whether the passage of a stream of ether vapor under pressure through the nose is not capable of producing irritation of the various accessory sinuses.) The fact that only a half, or less than a half, of the usual quantity of ether is required to maintain anesthesia with this method should not deceive us into believing that we get only a half of an anesthesia with it, for it is, in reality, a full one, and while the patient is in the upright position a continuous flow of vapor under pressure is, as a rule, not permissible. The only way in which ether vapor can be administered continuously while the patient is in the upright position is with the admixture of oxygen, but this combination, while producing a pleasing color of the face, increases hemorrhage. It is, however, always advisable to have the oxygen tank attached to the vapor apparatus to quickly relieve a narcosis if it should become too deep.

One of the results to be contended for is the avoidance of vomiting after operation to reduce the chances of infection of the wounds in the nose and throat. Of course, if a considerable quantity of blood has been swallowed, vomiting is desirable to prevent irritation of the gastrointestinal tract and, fortunately, most of it is usually ejected without therapeutic assistance. Therefore, if the diet table before operation is properly carried out, the less the loss of blood the less the need of vomiting, and

the less the amount of the anesthetic required for anesthesia the less the chances of vomiting both during operation and afterward.

There is, we believe, no more contributive factor in securing a rapid and an uneventful recovery than a well conducted anesthesia. That we are now in a position to be assured that an anesthesia can be

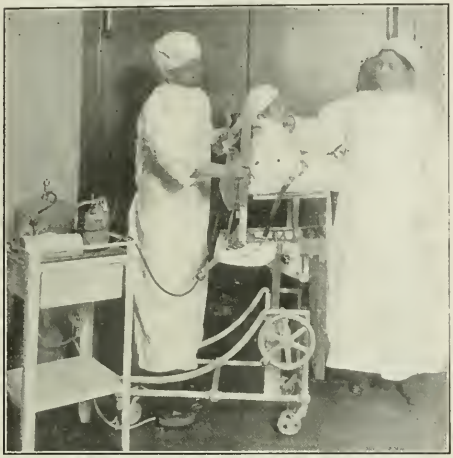

FIG. 1.—By raising the independent seat the chair table can be adjusted for operations upon infants and small children; by raising the chair part of the mechanism to a high level the head of the patient can be placed within easy reach of the operator.

well conducted, in the large majority of cases, through the cooperation of an accomplished expert anesthetist, is one of the delightful and satisfying outcomes of specialization in medicine. The day is probably near at hand when, except in emergencies, every operation of importance will be performed with the assistance of an anesthetist who is an acknowledged expert in his field.

NITROUS OXIDE GAS OR ESSENCE OF ORANGE ETHER SEQUENCE WITH SEQUESTRATION OF THE LIMBS.

This method consists in anesthetizing the patient in the manner just described and at the same time producing congestive hyperemia of the limbs by means of inflated blood pressure cuffs about the thighs and arms (Fig. 2) or thighs alone, to still further reduce the amount of blood in the head. Sequestration of the limbs was, we believe, first suggested by Dr. R. H. M. Dawbarn, of New York, in 1907, to reduce hemorrhage in operations upon the head. In our recent trials of various methods of anesthesia, Doctor Gwathmey advised a test of the Dawbarn method to determine its value in reducing hemorrhage in operative work in the nose and throat. He thought it would be a safe procedure if used with the new table. While contemplating a trial of sequestration we confess to having had a feeling of trepidation lest something should go awry, and especially because of the warning given us by one of our ablest clinicians who thought we would be likely to produce artificial syncope which might be difficult to control. We, therefore, gave the suggestion of such a test long consideration, during which we recalled, among other things, the not inconsiderable number of times in which, on freeing the patient from the chair used in the older method, we had found both arms deeply congested, indeed quite black, from the careless adjustment of the shoulder bandage. Those incidents, however, seemed to have caused neither disturbance during the operation nor harm, in any form, afterward. This gave us a considerable degree of assurance that the reduction in the amount of body tissue to be anesthetized would be free from danger. We relied, however, largely upon the ease and rapidity with which the new table could be tilted in the opposite direction for resuscitation, if conditions should require it. After beginning with a light pressure of the cuffs upon the thighs alone, which was afterward, in other cases, gradually increased, we attained at the end of the first operating clinic, in which these tests were made, as high a degree of pressure as we are using now; but it was not until a later occasion that we felt justified in employing the inflated rings upon all four of the limbs at the same time. In the first case, in which the trial was made, it was found that there was a marked diminution in the amount of blood lost and also that the anesthesia was prolonged, after removing the inhaler at the beginning of the operation, to a much greater extent than we had ever known it to be by any other method. And with very few exceptions—in which the conditions were unfavorable—the same experience has been repeated in every case in which the method has been used. Doctor Gwathmey guided the anesthesia and controlled the blood pressure cuffs in all the early cases in this test, the subsequent cases having been supervised by the hospital expert anesthetist, Dr. A. F. Erdmann.

We said in our paper of a year ago that two of the most important reasons for preferring the up-

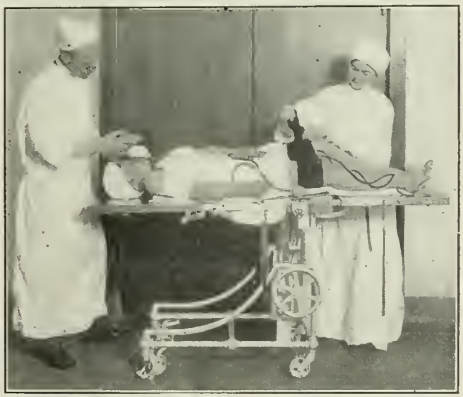

FIG. 2.—The blood pressure cuffs are applied at the end of the induction stage of anesthesia. White cuffs on arms partly inflated and a moderate degree of hyperemia is apparent. Black cuffs being applied about the thighs, but not yet inflated.

right position were a reduction in the amount of the anesthetic required and a reduction in the amount of blood lost during operation. The sequestration method, in association with the upright

position, which has been carried out in fifty-eight cases during the past season, reduces still further the amount of the anesthetic required and still further the loss of blood. That the amount of the anesthetic is reduced is proved by the fact that full anesthesia has often been maintained for fifteen or twenty minutes after the body was brought to the

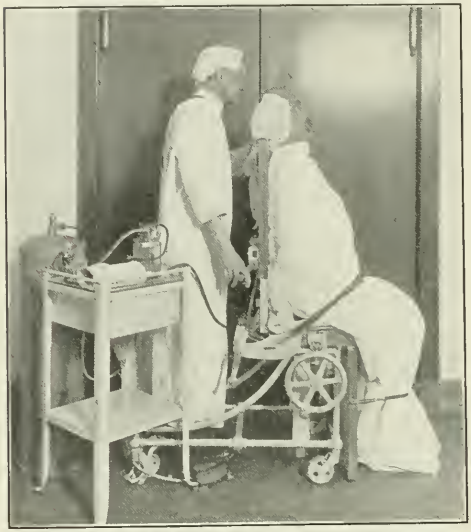

FIG. 3.—The telescopic chair back can now be adjusted to any patient's back however short or long. It can be extended somewhat further than is shown in this illustration. At full extension, as part of the table top in the horizontal position, it will support subjects of great weight.

upright position and the inhaler removed. Indeed, after beginning the operation, in most cases in which this method of anesthesia has been used, except for his assistance in other ways, we have been able to dispense with the services of the anesthetist; which is only another way of saying that during relatively short operations the further administration of the anesthetic has not been needed.

In quite a number of cases the quantity of blood lost during the removal of adenoid growths and the faucial tonsils (and we use those operations in illustration because the amount of blood usually lost in them is so well known), while sequestration was being applied, was believed to be less than a drachm. In many of the cases the blood loss, in operations in either the nose or throat, could only be measured by the appearance of the sponges; in most cases it was but slightly in excess of that, and in none was the bleeding as free as in the average case, of similar operative character, under the older methods of anesthesia. It may, therefore, be said that the average blood loss with the sequestration method, whether applied to arms and legs or legs alone, is far below that which occurs without sequestration, and that certain operations which with the ordinary methods are usually attended with a large loss of blood, may be rendered practically bloodless by the use of sequestration in the upright position.

We had thought of the possibility of secondary hemorrhage being occasioned by the sudden release of the locked up quantity of blood at practically the same moment that the body was returned to the horizontal position, but, happily, there does not seem to be reason for apprehension on that score, for, after the operations were finished and the bleeding arrested, there was no further hemorrhage in this series of cases.

We have already spoken of the careless adjustment of the shoulder bandage, and desire to call attention to it again in connection with sequestration. If the bandage is adjusted before the body settles into the sitting posture and is drawn too tightly, the patient may be literally hung up by the axillæ, when, of necessity, great pressure must be made upon the axillary arteries. This has not occurred during our tests because the drill of the assisting staff made it quite impossible, but should it occur while sequestration was being applied to both arms and legs, we can imagine the face assuming a hue which would suggest the propriety of tilting the body into the Trendelenburg position. As the "upset" movement can be quickly made with the chair table the conditions, in even such an extreme case, could be easily remedied.

Sequestration would have been used in a much larger number of cases had it not been necessary to make each test with deliberation in order that all conditions during operation could be noted, and, also, to permit the following up of the cases to determine whether injury to the nervous tissues or the musculature of the limbs could have been produced. The amount of pressure made with the cuffs varied from that needed to effect a slight diminution in, to that needed to produce a complete obliteration of, the pulse in the anterior tibial and the radial arteries, and we feared that the firm

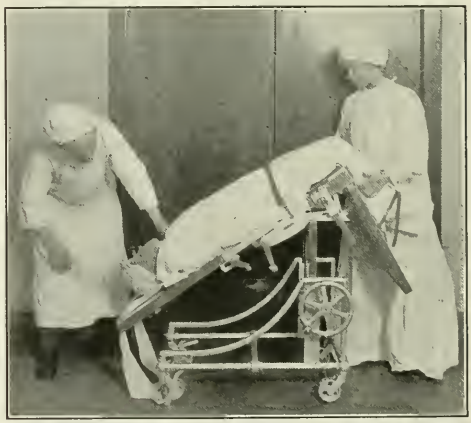

FIG. 4.—Trendelenburg position; footrest of the table dropped for use with heavy subjects; pressure from the hands of an attendant or the footrest straps will keep the legs flexed and hold the body on the inclined plane without other assistance.

pressure required to cause an obliteration of the pulse might produce injury to nervous structures; but in none of the cases could any history of untoward aftereffects be elicited. It is quite possible,

perhaps even probable, that this can be explained by the comparatively wide distribution of the pressure and the fact that it was made with a flexible air bag. The pressure was maintained in all but the earliest cases, from the end of the induction stage of anesthesia to the time of completing the operation.

The only patient operated upon since the series of tests of sequestration was begun, who presented symptoms after operation which suggested a previous injury to the legs, was a very delicate child of five years, about whose thighs the cuffs were applied, but which were not inflated. As the patient was an extremely delicate piece of human mechanism and the test was in its earliest stage, we regarded it as unwise to expose it to what might seem to be something of a risk. It would, therefore, appear that we just escaped the reputation of having had one harmful effect from this method of anesthesia.

To be able to administer a smaller quantity of an anesthetic and obtain a full anesthesia; to see the patient enter the anesthetized state without the stage of excitement; to be able to stop the administration of the anesthetic when the body is brought to the upright position and yet have the anesthesia prolonged enough to permit relatively long operations to be performed; to secure a greatly lessened loss of blood; and to insure a reduction in, and in many cases an almost complete abolition of, the disagreeable aftereffects, is, to say the least, something of a gain, and in a large proportion of cases, with the cooperation of a skillful anesthetist, all of these results are obtainable.

Our controlling thought in this work has been, and is, to reduce the necessity for "rough" surgery, and also to assist in the establishment of improved conditions from the standpoint of the patient. Crile—than whom none have done more scientific and humanitarian work in regard to shock—says, in speaking of "anoci association": "Now I am ready to admit that to accomplish this it is necessary to especially train the nursing department, the hospital staff, the anesthetist, and above all to train one's self to act with the greatest precision and only in the interest of the patient, and also I must admit that it immensely increases every one's labors." Such work does require time and much careful attention, but is it not time well spent and is it not in accord with the high ideals of our craft? A number of general surgeons, after viewing this kind of work, have expressed their doubts of its necessity, "for," they have said, "we rarely see surgical shock." They, evidently, think that nothing much counts short of profound shock. Well, there can be no doubt that many things occurring before and during operation contribute to shock, and the cumulative effect of many small shocks may be, and we believe often is, an exhausting discharge of nervous energy. If these premises are correct then, manifestly it is our plain duty to make note of, and carry out, the details and so contribute to the amelioration of the patient's distress. *Surgery has recently made a distinct advance in that, largely through "anoci association," operations have been still further robbed of their terrors.*

150 Joralemon Street, Brooklyn.

RECOVERY IN A CASE OF INFLUENZAL MENINGITIS COMPLICATED BY PNEUMONIA.*

By Thomas E. Satterthwaite, M. D.,
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While influenza is an affection that spares no organ or tissue of the body, it is usually recognized under one of three types, the respiratory, the gastrointestinal, and the nervous; although, as in the case now to be reported, there is very generally some intermingling of the features of the different types.

In this country, since the great epidemic of 1889, the respiratory type has been the most conspicuous; the others in a less degree and in the order given. In exceptional cases, however, the weight of the disease has fallen upon such special organs as the heart or kidneys, the chylopoietic or the articular system. But it is only of late years that the nervous type has attracted special attention, and even then not so much in its relation to the acute stages of the influenza as to its sequelæ, which comprise a number of nervous disorders, such as motor paralyses or pareses, affections of the special senses, epileptiform seizures, and various mental abnormalities. These sequelæ have sometimes protracted the disease for months or even years, leaving at times a permanent impression on the affected part. For example, many of us have known of instances where influenzal otitis media has left an incurable deafness, or a suppurating focus in an eye has partially or wholly destroyed the sight.

Less attention, however, has been paid to the nervous phenomena which are occasionally features of the acute stage, and which include neuralgias, functional disorders of the special senses, meningitis, cerebral or cerebrospinal, and psychic phenomena such as hallucinations, delusions, or even mania, as in this particular case. Of these only a comparatively small number has been reported, many of them with scanty details, so that the profession at large has not had opportunity to become very conversant with them. On two occasions when I saw such cases in consultation, one being of influenzal cerebrospinal meningitis and the other of the cerebral form, none of the consultants or attendants appeared to have previously seen these particular manifestations. In one, a case of influenzal cerebrospinal meningitis which I saw in Florence, Italy, in the spring of 1893, not one of the two other five physicians, representing four different nationalities, had ever seen it, though no doubt was thrown on my diagnosis. The patient recovered, after an unconsciousness of nine days. The patient in the cerebrospinal case died, after an unconsciousness of three weeks. In a third case, in a patient of mine, the subject suddenly developed mania, was removed to the insane pavilion of Bellevue Hospital before I had an opportunity of seeing him, and died there unconscious. As I have already said, such complications are rare; and yet Davis (*Journal of Infectious Diseases*, 10, 1912), has recently collected sixty cases from the

*Read before the American Therapeutic Society at its Fourteenth Annual Meeting, held in Washington, D. C., May 5 and 6, 1913.

literature and his own experience. Most of these were in children, whose delicate nervous system appears to render them especially sensitive to the toxines of the disease. In fact, most of the reported cases have been in the practice of pediatrists.

Pathologically speaking, the characteristic gross lesions consist of a series of minute hemorrhages scattered throughout the system, often causing such substantial changes in a tissue or organ that its vitality is impaired for a time or forever. And if for any reason the extravasation becomes infected by any of the pus producing organisms, the prognosis is most unfavorable. Such patients usually die, unless there is free vent for the infected material. The majority opinion is that the disease is due to the influenza bacillus discovered by Pfeiffer, which, though it may not always be found *intra vitam* in the blood or secretions, or even by lumbar puncture, will usually be recovered at post mortem examination by diligent search, though it may be associated with other microorganisms, such as the pneumococcus or streptococcus, or may be replaced by them. It is a singular fact that it may not always be found in the fresh spinal fluid drawn by lumbar puncture, and a satisfactory explanation of this failure is much to be desired. A plausible theory is that offered by Leichtenstern, who divides influenza into three classes, only one of which is grippal influenza.

There are several methods by which the poison invades the meninges; by extension, as from an otitis media or from abscess of a sinus, by metastasis, or by general infection of the blood by toxines. That is, in the extension of the disease the poison follows the routes that are pursued by other organisms that produce systemic infection.

Influenzal meningitis is usually ushered in by violent pain in the head, especially in the frontal region and back of the neck, facial neuralgia, and photophobia. There are apt to be also irregular contractions of the pupils, muscular spasms, hallucinations, delusions, unconsciousness, perhaps mania. At first there will be a high pulse rate, perhaps with arrhythmia. In the early stages patellar or ankle reflexes are apt to be exaggerated. Later, if there is effusion into the ventricles or at the base, there will be loss of these reflexes, relaxation of the pupils, stupor, and slow pulse. Judging from the limited number of cases reported, there is a moderate leucocytosis at this stage. In from six to ten per cent. there is said to be albuminuria, but unless there is profound implication of the kidneys the albuminuria should be short lived. There appears to be seldom any diminution in the number of red cells, or in the amount of hemoglobin, both of which may be increased.

Influenza, we should remember, has been and is one of the most dangerous of epidemics, if we include its complications and sequelæ. Hymanson has collected twenty-six cases of simple or purulent meningitis, associated with influenza (*New York Medical Journal*, December 25, 1909), of which five were adults, with only five recoveries, a mortality of about eighty-one per cent. Pisek has collected fifty-eight cases of influenzal meningitis, which also included five adults, with a mortality of about ninety-two per cent. I have collected a series of forty-four cases of all ages, with nine deaths, a mortality of about twenty per cent. In a second series of thirty-four cases, of which all were adults, there was a mortality of ten, or about twenty-nine per cent.

But the prognosis is very different when to influenzal meningitis pneumonia is added. Usually it takes the bronchial form; in other words, it is lobular, and is disseminated, involving the lower lobes, though any lobe may be affected, and even the whole lobe, as in true lobar pneumonia.[1] In the case here reported there seemed to be a mingling of the lobar and lobular. Allusion to such cases has been made by Leichtenstern. It started apparently as an extension of a bronchitis, and in the right lower lobe when first detected was apparently a central lobular pneumonia. In the left upper lobe the deposit occupied most if not all of the lobe, and presented the usual physical signs of the lobar form. The temperature curve was also that of a fairly well characterized lobar pneumonia. Defervescence occurred on the seventh day. Pneumonia occurring in influenza without meningitis has a mortality which is extremely variable. Probably a slight pneumonia from an extension of the bronchitis is tolerably common, but the mortality has reached as high as forty-three per cent. On an average, according to my computation, it is about twenty per cent. Davis, in his sixty cases of influenzal meningitis already alluded to, found that in twenty-six that were examined post mortem pneumonia had occurred as a further complication of the influenza in twenty (seventy-six per cent.), but, of course, in meningitis death may be due to intracerebral effusion, cerebral hemorrhage, abscess, or other causes. In the six out of my thirty-four cases of influenzal meningitis with pneumonia, all I have been able to collect from the literature, five patients died. In the sixth there was an incomplete cure. The patient (Bury, *British Medical Journal*, September 29, 1900) suffered for two years following the attack from aphemia, that variety of aphasia where there is loss of the power to give the names of persons previously known. The attack also left his mentality affected.

The case I am now reporting is, therefore, so far as I have been able to learn, the only recorded instance of a full recovery in influenzal meningitis complicated by pneumonia. It is as follows:

On March 1st of this year I was called to see a young man, twenty-five years of age, of good habits and normal physique. During the previous week he had been suffering from prostration, cough, bronchitis, and the usual manifestations of a mild influenza (grippe), which had kept him indoors, though he had not called in a physician. On the day before, however, he had exposed himself at an open window in his bedroom. Subsequently, and before I saw him, there had been a chill and violent headache. I found him unconscious, with pupils somewhat irregularly dilated and irresponsive; breathing rapid and labored. Temperature by the mouth 103.5° F.; pulse, 138; respiration, 26. Under moderate doses of the bromides, given at frequent intervals, consciousness partly returned in a few hours, when he again complained of severe

[1] I was the first to give a comprehensive account of bronchial pneumonia in the adult. The literature had contained only scattered instances of it. I gave twenty cases from my own experience (*British Medical Journal*, December 7, 1889), believing that it merited a classification apart from the bronchial pneumonia of children. All of my cases were proved by post mortem examinations.

headache and pulmonary oppression. He was restless, and had twitchings of the right leg and facial muscles; i. e., clonic convulsions. The bromides were given in increasing amounts, and as there were signs of beginning pneumonia, a hygroscopic, antiseptic poultice was applied to the chest. During this day a hundred and ten grains of bromides (bromides of ammonium, sodium, and potassium) were given for the convulsive movements and cerebral symptoms; temporarily the twitchings were controlled. The pain in the neck and head was relieved principally by ice bags and cold fluid applications.

On the second day the cough, which had been in abeyance, returned, and signs of pneumonia were easily recognized superficially in the left upper lobe and centrally in the right lower lobe. The temperature, which was taken by the rectum, rose to 106° F.; the pulse to 120, and the respiration to 40. A blood examination gave white blood corpuscles, 27,000; polynuclears, ninety-six per cent. A very grave prognosis was given. The diagnosis of pneumonia was confirmed by two consultants. During the day three hundred grains of the bromides were given.

On the third day there were nausea and vomiting. Highest temperature, 105.2° F.; pulse, 124; respiration, 34. There was moderate diminution of blood pressure tension, as shown by the sphygmomanometer, the amount in millimetres on this day and during the acute stage running on an average below the pulse rate. I judged that this low blood pressure was due either to the loss of blood from the minute hemorrhages or to the intoxication from the toxines circulating in the blood; probably the latter.

On the fourth day the highest temperature was 105.4° F.; pulse, 115; respiration, 42. Vomiting of dark fluid and blood, together with the brownish liquid stools, was taken by me to indicate that the gastrointestinal tract was involved, and that there was now an intermingling of the symptoms of the three influenzal types. Calomel, one grain, was now given daily in divided doses, with a high enema. The sputum was rusty and streaked with blood. No influenza bacilli were found in it, but the diplococcus of pneumonia (Frankel's) was discovered. Ten grains of hexamethylenamine were given, dissolved in a pint of water, and thirty grains of this, in all, were taken during the twenty-four hours. In addition, strychnine sulphate, in doses of one sixteenth grain, was given every few hours.

Fifth day.—Highest temperature, 104.9° F.; pulse, 104; respiration, 48. As a heart tonic there was now given a combination of digitalin, strophanthin, and glonoin, 1/100 grain of each, every four hours.

Sixth day.—Low muttering delirium, as of typhoid. Highest temperature, 104.8° F.; pulse, 106; respiration, 40. Bromides given freely, also on one occasion morphine sulphate ⅙ grain, and atropine sulphate 1/150 grain. Petechial eruption on chest. White blood corpuscles, 17,000; polynuclears, eighty-six per cent.; lymphocytes, fourteen per cent. All food refused. Hexamethylenamine suspended. Patient irrational most of the time; mild delusions; excessive sensitiveness to sounds. Urine normal in amount, but containing a heavy cloud of albumin; involuntary passage of feces. Toward the end of the day the patient took a cup of coffee with milk.

Seventh day.—Camphor, three grains, in aseptic oil, given hypodermically every six hours; strychnine continued. Temperature had fallen to 99° F.; pulse, 84; respiration, 24. Patient slept better, and took his nourishment; rational.

Eighth day.—Yellowish sputum mixed with blood. Desire for food.

Tenth day.—Camphor hypodermics suspended.

From this date on recovery was rapid and uneventful, the pneumonia resolving quickly. On the seventeenth day the patient sat up in a chair, and on the twentieth was up and about the house. The lungs had cleared, and practically all signs of pneumonia had disappeared.

In this instance the temperature followed pretty closely the characteristic curve of lobar pneumonia. It fell abruptly at 99.8° F. on the seventh day. Lumbar puncture was discussed, but not practised. The diagnosis of influenzal meningitis with pneumonia was made on the first day the patient was seen, so that the presence of the influenzal bacillus as a factor in the diagnosis was negligible. Other reasons against lumbar puncture were that in the adult it had not, in my estimation, proved itself of sufficient curative value; that the liberal use of the bromides in massive doses, together with the cold applications to the head, did give relief to the nervous symptoms; and finally, that the influenzal bacillus is not always found even in the fresh spinal fluid. The blood pressure never exceeded 110, and was at first below that figure. Milk, with an alkali, usually Vichy water, plain water, or albumen water, to which the yolk of a raw egg was sometimes added, constituted practically all the nourishment used during the acute stage. Occasionally alcohol was tried, but never more than two drachms at a time, and finally it was given up during the acute stage, owing to the patient's objection to it. Otherwise vitality was maintained by strychnine and camphor. The usefulness of hexamethylenamine was not evident; it was given for several days, but discontinued on the sixth day. Temperature was lowered by the cool bath when it exceeded 103° F. The room was maintained at a temperature of 65° to 68° F., with an abundance of fresh air. In general, the treatment was symptomatic, indications as they appeared being met by established therapeutic measures.

In conclusion, I should be lacking in my duty to those who assisted me in this remarkable case if I failed to record my obligations to Dr. W. H. Porter and Dr. C. E. Nammack, who saw the patient with me in consultation; to Dr. Morris Carpenter and Dr. Allan Carpenter, one of whom was in constant attendance, and to whom, in a large measure, I feel that the successful issue of the case was due; to Dr. Mary Halton, who attended to the blood count and bacteriological examinations of the blood and sputum; and to the tact and skill of the eight male and female nurses employed first and last, all of whose services were unusually satisfactory.

7 East Eightieth Street.

SHOULD AN INTERNESHIP BE REQUIRED?*

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The discussion of an interne year has been active for some time. During the last year the matter has reached the stage of explosion, and the requirement of a hospital year is among the plans of a number of State boards of medical examiners.

The Council on Medical Education of the American Medical Association has seriously under consideration the inclusion of such a requirement for a standard college of medicine and the American Medical College Association has discussed the matter.

There can be no question of the general axiom that a hospital experience is desirable for the man who intends to practice medicine, and there can be no doubt of the more efficient training of the man who undergoes such a service. There is, however, some question as to the expediency of promulgat-

*Read at the annual meeting of the Federation of State Examining Boards, Chicago, February 25, 1913.

ing any rule requiring such service at a time when the likelihood of satisfying the rule is remote. We must assume that the objects aimed at in an interne year are purposeful, and that in discussing the question the important points at issue should be set forth. The main contention seems to be that the present medical graduate is not qualified to engage in the practice of medicine and that one year in a hospital will satisfy the deficiency.

In what particulars do medical graduates lack qualification to practise medicine? The argument must be based upon graduates from the average college, and not from the exceptional colleges, for the latter offer the clinical experience in medicine, surgery, obstetrics, and their allied subjects, covering one or more years of systematic work, which no ordinary hospital experience can replace. More than this, some schools of medicine are so related to hospitals that the instruction is actually accomplished in the hospitals every day, so that, saving actual residence in the hospital, the student enjoys all the privileges and experiences of the hospital.

The average college of medicine, however, has no such opportunities. The clinical side may be taught well, with limited material often, yet the graduate lacks the technical experience with the surgical cases and medical cases needed to equip him for his actual work afterward.

Can the interne year satisfy such a need? We may answer affirmatively only by qualifying the answer with the postulate that the hospital is large enough to provide a variety of service, that the material is systematically arranged, and that the interne has a status permitting actual practical experience.

Are there enough hospitals properly equipped and so administered as to allow this? We cannot answer this question just yet, and may not be able to answer it until the hospitals of this country are studied with a view to their availability for educational purposes. In the meantime, we know that most hospitals are not favorably disposed to construct the administration so as to allow the interne service for any but utilitarian needs, and many hospitals resent the likelihood of association with educational institutions, if there is also likelihood of control by the educational institutions. In other words, many hospitals engage internes because of the service they may be able to render the sick, and the interne is permitted to gather such experience as he may. The experience in many places is limited to the barest assistance, and in few places outside of the largest cities is the service at the hospital systematically organized. The number of hospitals, then, available for interne service promising educational or systematic advantages is limited.

How can the college require an interne year if it cannot direct or specify the sort of service required, and how can the college pass upon a credit for an interne year unless the hospital and the interne are under immediate control of the college? The undergraduate interne services have passed out, and quite properly. If the interne position is open to graduates only, the college must either offer advanced credits for hospital service or keep entirely free of any connection with the interne year requirement. But let us suppose it is agreed to grant *cum laude* credit for hospital service after graduation, on what basis can the additional degree be established? And, further, what class of hospitals (if the same may be selected with discrimination) will be qualified to afford the required service and the required credits?

It would seem that, at all events, the college cannot require the interne year for graduation, for even if the degree were withheld for a year until the internership had been satisfied, there are enough graduates in many schools who need admission to several hospitals to satisfy their number, and in a variety of hospitals, with a variety of methods, it would be difficult to fix a standard on which graduation could be equitably established. This may come, but as yet it has not arrived.

With the State licensing boards the question is different and, perhaps, simpler—but not yet nearly solved, if the regulation of an interne year is to mean anything more than a perfunctory requirement. State boards, however, have established standards of elementary education, terms, and character of study in the medical college, and it would seem that such boards could bring enough influence or authority to bear upon the State legislatures to enact special laws governing the interne positions and services required at State hospitals. And, thus far, State examining boards may succeed in establishing standards of internership.

Then, systematic work might be accomplished under regulations of the State, but unless all States acted similarly, there would be no way of calculating the value of an interne year spent outside the State, in a hospital not under like rules.

In other words, *hospitals must either be standardized for educational purposes,* or the interne year accredited upon some basis of service and work, according to which full or modified credit may be allowed. For this step we may hardly be said to be ready.

What should the interne get from one year's service? The lack of a clear definition of an interne year, until now, has made it difficult to discuss the whole matter assuredly. Until the interne year is outlined with some particularity it is going to be hard to make a rule for its enforcement as a standard, either of medical education or for medical licensure. Moreover, at present *it would seem almost impossible to standardize the interne year.*

State boards may formulate the course of the interne in institutions under State control, and they may refuse to recognize hospitals under other forms of control, but the interne would suffer.

The ideal condition must presuppose such an affiliation of the college with the hospital as to allow the direct supervision of the interne while engaged in hospital work.

As an undergraduate it is not possible for the interne to do honest work at college and to satisfy the obligations of hospital services too, so that hospital interne service must apply only to such students as have satisfied the required curriculum of a medical college, and the internership must be added either as a requirement for the doctor's degree or as earning additional credit. This has already been discussed and the argument points to the latter conclusion.

With the fullest affiliation of college and hospital, the interne year must be arranged upon some basis which will fullfil an arrangement through which the graduate will establish credits for systematic work in medicine, surgery, obstetrics, pathology, and their collateral subjects. At best the division of service will necessitate the arrangement of periods in hospitals, with rotating groups assigned to fields of work in the hospital, changing every three or four months, if all of the clinical branches are to be covered in hospital experience.

The surgical experience should cover the detail of operation and postoperative care of patients, embracing special subjects in surgery, as well as general surgery, and the experience in the field of medicine must include the special work in pediatrics, nervous, and skin diseases, if the service is to be complete.

Such an outline, briefly set forth, means in the best adapted hospitals the willingness on the part of the administration to allow the interne service to be used for educational purposes as the first object, and to make secondary the business of the hospital, for the frequent changes of service among internes can hardly make for the greatest efficiency in administration of the needs of the sick, and even a greater number of internes cannot overbalance the difficulty of order in service.

In hospitals not owned or controlled by medical colleges, the conditions cannot be as well arranged, and the service of an interneship in direct relation to a curriculum requirement must grow less and less valuable as the relationship of the college and the hospital diverges. The efficiency of hospital internes, from the standpoint of administration, grows greater as the service of the interne is concentrated upon divisions of work in which they are the longer trained. The observation of hospitals of varying size and importance argues for longer periods of service of internes in divisions of the hospital and an eighteen months' or two years' hospital interneship makes the interne more useful to the hospital than any shorter period. One year of service is, therefore, of doubtful usefulness to the hospital, and of still more doubtful usefulness to the interne, especially if in such service he is to be harassed by such frequent changes in his assignment as to make of him an untrained man in each.

The interne year, then, if made obligatory for the license, should require service aiming at efficiency in a variety of subjects, and experience argues that one year cannot create such efficiency under existing organization of hospitals nor in the likelihood of a reorganization of hospitals, even when the hospital is willing to adapt itself.

If the graduate needed experience before engaging in the practice of medicine we should incline to argue for a postgraduate clinical year, as more likely to accomplish results than an interne year without proper supervision. More than this, if the clinical year were incorporated as a requirement for graduation and before license, a more systematic clinical training would result, particularly if the clinical training were carried on in fully equipped hospitals and under the direction, in the clinical services, of the college faculty, engaged in systematic instruction to the desired end.

In such a clinical year, the necessary bedside experience in medicine could be had; likewise surgical and obstetrical experience, and in such a fifth clinical year the student could learn enough of the collateral clinical branches to make him practical at the end of the period, as practical as the interne who will have had few, if any more, advantages in experience, with far less opportunity in instruction.

The discussion of the regulations and practices of other countries has so far been avoided, because in the way of an argument it might lead too far afield. We have to deal with conditions which exist in our own country, and no matter what the ideal may be, we can prove no right to make an ideal an obligation when we know it may not be fulfilled.

In Great Britain, for example, especially in London, the medical schools have grown around and from the hospitals; the broader education of the medical man has gradually developed so as to increase the importance of the scientific side added to the more practical beginnings.

It has been easy to fix the interne training as a part of a medical college curriculum, when it has actually been the result of pruning the hospital side of the students' education to make place for the laboratory. This same experience has occurred in some places in this country, and the older University of Louisiana, now Tulane University, with its medical department, is an example. Twenty years ago, the student almost lived his days at the hospital, from the beginning of his first year until he graduated. Between times he sat to listen to didactic teachers and spent his nights in the dissecting rooms.

Medical education changed and the hospital gradually passed out of its engrossing position into a secondary place. Now the maturer reflection must argue to us that perhaps we have gone too fast and that we have sacrificed something in the hurry to make plans for an ideal medical education. We may reach a satisfactory compromise by putting back in a concentrated form the clinical experience absorbed by students formerly unprepared, so as to offer it now to students matured by a scientific and laboratory foundation.

In Germany and Austria, and even in France, most of the hospitals are directly under State supervision, and there is more reason for the required interne year where uniformity in service can be reckoned.

This is submitted, as well as the English system exampled to argue our readiness for a new rule, and not to oppose the proposal entirely.

We should have an interne year when we can offer it adequately; until then we should not make a pretense of requiring what we know will be impossible for the majority to satisfy.

In the meantime, by doing the best we can, we may satisfy the need of the intending doctor and we may save the public in some degree more than formerly.

CONCLUSIONS.

1. The interne year is desirable for license if it can be made systematic, which at this time is not probable. Therefore, any rule requiring an interne year is inexpedient, and if adopted would work a hardship on all but the graduates of a few colleges owning or controlling hospital services.

2. There should be an attempt at the gradual standardization of hospitals to educational purposes, with the future expectation of correlating hospitals and colleges of medicine in each State. This will require extensive education of the lay community.

3. Until such time, a fifth, practical, clinical year should be required of medical graduates, and therefore should be required by State boards of examiners.

4. To make such a clinical year efficient, State boards of examiners should stipulate the detail and amount of practical clinical work in each branch to be certified as a part of the application for a license before the candidate is admitted to examination. Such stipulation should specify each branch of medical and surgical practice and the scope of training required.

124 Baronne Street.

THE MENIERE SYMPTOM COMPLEX.*

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Case. Just a year before Mr. M. S. appeared for treatment, he suddenly took sick while at his business, his trouble beginning with an attack of vomiting. He told a story of having dropped to the floor, in a sort of spell, but was not rendered unconscious. His extremities became cold, and simultaneously his left ear began "to work" —in other words, he had an attack of dizziness and tinnitus. He never had had such an attack before. Furthermore, he added, he became deaf during the attack, although he could hear perfectly well before he fell down. The deafness lasted after the attack was over, although there was considerable improvement; that is, he was not so profoundly deaf after, as during the attack, but he never entirely recovered his normal status as regards his hearing. The tinnitus likewise continued, but it varied as to its intensity, gradually improving, and then when subsequent attacks came on—as his further history showed—it again became more intense with each onset.

Following the attack, just described, the patient was comparatively well for three months. Then, while riding on a street car, he suddenly underwent a similar attack, the principal features of which were dizziness, tinnitus, and deafness, accompanied by palpitation of the heart. He was taken in an ambulance to Bellevue Hospital, and after a day in the hospital permitted to go home.

After the second attack, he suffered onsets of this series of symptoms every second week, lately accompanied by slight mental disturbances. He declared himself "without the will to make an effort," was unable to get up and walk, etc. He characterized his dizziness as a *"turning toward the left."*

I had the good fortune to be enabled to study and examine him during one of these attacks. He sat very stiffly erect looking fixedly forward into space. He could, upon command to do so, turn his head toward the right side (healthy ear), but could not or would not turn his head toward the left side. If I forced him to turn his head toward the left side, and if he tried to do so, he had to grasp something to hold himself, or he would drop. There was no spontaneous nystagmus present. Between attacks he felt weak, but not dizzy. The attacks were not preceded by aura.

Here then is a case, typical of a fairly large group of sufferers who exhibit the Ménière symptom complex, and who occasionally reach the observation of a competent otologist, but more often are under the care of a neurologist. Because the study of this class of cases furnishes common ground between us, and because much of the recent advance in diagnosis and differential diagnosis has been won for medicine by otologists, I gladly accepted the invitation to present what small gleanings of truth otology possesses on this subject.

In 1861, P. Ménière published a description of a series of clinical phenomenon which since that time have caused the simultaneous and sudden onset of deafness, tinnitus, and vertigo to become designated Ménière's disease, or, more properly speaking, Ménière's symptom complex.

Considerable confusion arose in the ensuing years in the failure sharply to define and clearly to comprehend just what is meant by the Ménière symptom complex. Cases in which the sudden onset of deafness, tinnitus, and vertigo were recorded resulting from inflammatory changes and processes in the middle ear—cases in which the clinical picture was produced by a sudden stenosis of the Eustachian tube, or the sudden filling of the tympanitic cavity with inflammatory exudates—these were confounded with the cases presenting deafness, tinnitus, and vertigo, and a normal condition of the middle ear. Ménière's clear, clinical observations were acute enough, even in 1861, to recognize that the class of disease, which since then bears his name, presents a normal tympanic cavity. An exception to this statement may be noted in passing, inasmuch as it is possible for a patient to suffer from the effects of a middle ear lesion, and during the course of his middle ear disease, to suddenly present a train of symptoms typical of the Ménière symptom complex—the latter chain of phenomena being wholly independent and existing only coincidently, and actually having no pathological interrelationship with the middle ear disease.

The Ménière symptom complex consists in the domination of the clinical picture by sudden attacks of deafness, tinnitus, and vertigo. Additional reports by other observers have recorded clinical studies wherein additional significant symptoms were noted. Thus Politzer noted a short period of total loss of consciousness just preceding the onset of the classical symptoms. Double vision is noted by Jacobson, while Knapp remarks a transitory clouding of the visual fields; transitory hemiopsia with horizontal separation line noted immediately following on the onset of an attack is the report of Moos, while both Politzer and Guye noted psychic depression and loss of memory during the first week of the disease.

Both Ménière and Charcot record the finding of a semblance to an aura. Whatever the individual case may present, these additional clinical symptoms must find explanation in concomitant conditions, for they find no explanation in the more recent study of the disease, with the newer means at our command, and for our discussion this evening, in the interest of clarity, they will not receive attention. They are mentioned for the sake of emphasizing the fact that a train of *secondary* symptoms may be presented, of subordinate importance to those of deafness, tinnitus, and vertigo, for this train of symptoms points the way toward a localization of the lesion, and it is this aid to diagnosis which most concerns us at this time.

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*Read before the Section in Neurology and Psychiatry of the New York Academy of Medicine, February 11, 1913.

Based on numerous clinical observations and on one autopsy report, additionally substantiated by the experimental work of Flourens, Ménière came to the conclusion that the lesion underlying the disturbed function was to be found in the semicircular canals of the labyrinthine portions of the ear, and our most recent studies and advances in diagnostic aids, fully support this observation.

The literature is not possessed of recent studies of the Ménière symptom complex in the light of findings from exact tests of the labyrinthine functions made *before, during,* and *in the interval* of the attacks of the symptom complex. Here is an open field for further cultivation, and in order that a basis may be laid for subsequent work, permit me briefly to outline our means of diagnosticating labyrinthine and retrolabyrinthine lesions. At the present writing we must content ourselves with saying that not enough material has been studied to justify any conclusions.

As you know the *cochlea* is concerned with the reception of sound waves; i. e., it is concerned with the function of hearing. This portion of the internal ear, we designate the auditory or the acoustic labyrinth. Failure of function in this portion of the labyrinth results in deafness. The *utricle, saccule,* and the *semicircular canals,* considered together as one organ, are concerned in the maintenance of our muscular tone and our equilibrium. This portion of the internal ear we designate the static labyrinth. As the normally functioning acoustic labyrinth is ever awake to send impulses centreward upon the reception of a sound wave, so we must, in a sense, concede that the static labyrinth is never at rest, but always in a state of activity, sending centreward a constant stream of impulses toward the brain centres to keep us acquainted without position in space, and the frequent changes in our relative position. In other words, to give us not only a conception of our position to space, but the relative position of parts of our body, the changes of these, and the idea of motion.

Failure on the part of the static labyrinth to perform its proper function results in a *temporary* or *transitory* loss of balance; transitory, because after the lapse of an appreciable interval of time, varying individually, the brain and cord centres to which these impulses from the normal static labyrinth go, seem to accommodate themselves to the loss of these impulses, and there ensues what we term *compensation.* An example in point is furnished by those deaf mutes whose labyrinths are destroyed by purulent disease in early infancy, and in whom we find later on in life perfect body coordination and balance, due to this act of compensation.

The share which impulses from other sources play in conjoining with the normal impulses from the properly functioning static labyrinth to maintain our balance, and our muscular tone remains as yet undetermined. This much can be stated: All the impulses reaching the centres work *harmoniously* together, either by direct paths, or through reflex paths. Every failure to work harmoniously together, *every disharmony* in these impulses, if severe enough, causes irregular function with consequent disturbances of balance. The nature of this disturbance varies with the physiological characteristic peculiarity of the end organ from which the *reciprocally conflicting* impulse arises.

Our acquaintance with our position in space, and with changes in that position, accelerations or retardations of motion in a straight line, and rotation, come from harmoniously acting impulses from the static labyrinth. With these perceptions of our position and its constant changes, there are awakened reflex stimuli, whose purpose it is to cause the eye muscles and the body muscles to accommodate themselves automatically and unconsciously to the conditions calling these reflex stimuli into being.

When an impulse is started in the static labyrinth so strong that the central checks and balances no longer control it, then there ensues a disturbance of equilibrium whose characteristics depend upon the functional activities of this organ. Hence we have disturbances in our perception of position, sensations of turning, in addition to disturbances of the eye muscles, resulting in the condition known as *nystagmus,* and finally we have disturbances in the body muscles which give rise to the so called *reaction movements.* Furthermore, in the floor of the fourth ventricle, the close relationship of the central vestibular nuclei to the nuclei of the vagus nerve causes a radiation of the impulse from the vestibular to the vagus nuclei, and we have nausea and vomiting as a symptom of such an impulse.

An inharmonious impulse, sufficiently powerful to overcome the normal checks and balances, may be artificially induced in various ways; *mechanically* by rotating an individual around a given axis, or by increasing the endolabyrinthine tensions of the endolymph through the application of air pressure, when a pathological opening is present in the labyrinthine wall; *calorically* by applying hot or cold water or other fluids to the labyrinthine neighborhood; *chemically* by applying substances directly to the exposed membranous semicircular canal; and, finally, *electrically* by applying the galvanic current to the labyrinth. These are the means which we have come to use to test the function or lack of function of the static labyrinth, and from the interpretation of the results of these tests diagnosis and differential diagnosis of labyrinthine and retrolabyrinthine lesions become possible.

From the clinical standpoint, the most important reaction following an inharmonious impulse from the static labyrinth is *nystagmus,* and a brief survey of this symptom is necessary.

Nystagmus may be defined as a rhythmic movement of the eyeball, to and fro, consisting of two components, one slow movement due to the vestibular reflex, and a second faster motion, the result of the effort of the will to fix the eyeball upon a definite object. The nystagmus is named after its faster motion.

When I say that the slow component is of the vestibular reflex origin, I take this to include the cerebellar tracts and centres of the vestibular nerve fibre distribution.

It is to be remarked in passing, that an oscillating movement of the eyeball, equally distant in both directions, and of equal speed in both directions, is of purely ocular origin; and here we have the first differential point in the diagnostic data obtainable

from the study of nystagmus. The discussion of ocular nystagmus is not within the scope of this paper.

Labyrinthine nystagmus, composed, as it is, of the two unequal components, occurs in the plane of that semicircular canal which sends out the impulse arousing it. The slow component takes the direction of the endolymph stream.

When an impulse is awakened from the static labyrinth during a state of unconsciousness, as when the individual tested is under narcosis, the slow component alone appears, because the effort of the will, which contributes the rapid component, is absent.

Finally, it is to be remembered that since either labyrinth is in relation with the nuclei of the third and sixth nerves *of both eyes,* an impulse aroused in one labyrinth, even if the other is totally destroyed, is capable of causing both eyeballs to execute nystagmic movements in all planes and with a rapid component toward either the right or the left side. Inharmonic impulses from the static labyrinth produce in addition to the nystagmic movements other phenomena, part of which may be classified as *subjective sensation,* and part of which are of *objective* nature. The former consist, on the part of the patient, of experiences of *being turned,* and of an apparent turning of the objects in the patient's environment. These experiences are in close parallelism to the nystagmus, but are not so constant and uniform as nystagmic movements, and, therefore, form a less trustworthy basis for tests of labyrinthine function. The sensations or experiences just referred to are often most intensely evident to the patient when his eyes are closed.

The *objective phenomena* are termed *reaction movements. The reaction movements* affect the extremities and the trunk of the body. Not nearly as important as is the study of nystagmus for eliciting data of diagnostic value, yet a careful study of these movements adds considerable information as to the status of the labyrinth. The significance of reaction movements becomes of considerable importance when the involvement of the cerebellar centres comes into question.

The movements are not ordinary reflexes. According to Bárány, who first studied them in relation to cerebellar functions, they actually consist in voluntary movements modified in the cerebellar cortex by abnormal, inharmonious, centripetal impulses from the semicircular canals. Ordinarily, motor impulses from the *cerebrum* meet the impulses passing centripetally from the semicircular canals in the *cerebellar cortex* and there results a normal, well balanced, and coordinate voluntary motion. When instead of this the impulse coming from the semicircular canals, is abnormal—is inharmonious—because of disease in the static labyrinth, and such abnormal impulse reaches the cerebellar cortex to meet the motor impulse from the cerebrum, there results a change in the voluntary motion which produces the so called *reaction movements.*

The exercise of the will influences to a certain extent the reaction movements, and we therefore find them most marked in individuals without highly developed muscular and kinesthetic sense. They are most prominent in children.

All the centripetal impulses whose purpose it is to maintain our equilibrium are gathered together in the cerebellum, and speaking in a most general way, the cerebellum is the centre for the static labyrinth. The cerebrum plays a subordinate part to this centre.

Summarizing then, we may consider the cerebellum as a sensory motor subcortical central organ *receiving* centripetal impulses from the static labyrinth and sensory impulses from muscles and joints, in addition to visual impulses from the eyes, and *sending out* motor impulses to the muscles of the head, trunk, and extremities, the purpose of which is the maintenance of our body equilibrium. Certain of these "outgoing" impulses, it must be noted, are under the domination of the will, and these reach the cerebellum from the motor areas of the cerebral cortex.

The connections between the static labyrinth and the cerebellum, between the joints and muscles and the cerebellum, and the cerebral cortex and the cerebellum have been studied. To paraphrase Braun and Friesner (from their recently published excellent book on the labyrinth), these tracts are as follows:

The vestibule and semicircular canals send out impulses which pass through the vestibular nerve to Deiter's nucleus. The pathway from the nucleus leads to the corpus dentatum of the cerebellum, and from this body to the cortex of the worm and cerebellar hemispheres of both sides.

The muscular joints send the sensory impulses into the spinal cord through the posterior nerve roots where the fibres terminate about the cells in Clark's and Stilling's columns at the base of the posterior horn. Fibres from the cells go upward through the lateral tracts of the cord in Flechsig's and Gower's columns, and reach the central nuclei of the cerebellum through the inferior cerebellar peduncles. From the central nuclei fibres finally reach the cerebellar cortex.

Tracing the impulses from the cerebral cortex, impulses originating here pass down through the internal capsule and the crura cerebri to the pons. Collaterals are now given off which terminate in the pontine gray matter, and onward from here, the fibres pass across through the middle cerebellar peduncles to the cerebellar cortex of the opposite side. From the cerebellar cortex, according to Levandovsky, the motor impulse is further to be traced in two channels: 1. From the cortex of the cerebellar hemispheres to the dentate nucleus, then through the brachium conjunctivum to the red nucleus of the tegmentum of the opposite side; from here downward again through Monakoff's bundle across to the opposite lateral tract of the spinal cord terminating about the anterior horn cells. 2. Starting again at the cortex of the cerebellum the impulse passes to the nucleus tecti, from there through the tractus uncinatus to Deiter's nucleus and the ventrocaudal Deiter's nuclei of the opposite side, and continuing onward, the impulse passes down through the Deiter's spinal tract to the posterior longitudinal bundle of the cord to the anterior horn cells. Both cerebellar hemispheres are thus seen to be connected with the anterior horn cells of the same side of the spinal cord. Impulses reach Purkinje's cells in the cerebellar cor-

tex from the vestibular apparatus, the muscles, and the joints, through the intermediation of the cells of the granular layer. Axis cylinder processes of the granular layer cells are distributed to a large number of the Purkinje cells. These Purkinje cells are further found to be joined together by means of the basket cells. Thus an impulse from the static labyrinth is transmitted to a large number, possibly even to all of the Purkinje cells. On the other hand, the impulses from the cerebrum reach Purkinje's cells through the so called *fibres grimpantes,* one of which goes to only one Purkinje cell. The connection is seen to be in this way strictly individualized. From the Purkinje cells the impulses pass down through the motor tracts to the anterior horn cells of the spinal cord.

The impulses concerned in the nystagmus reflex arise in the static labyrinth and pass through the vestibular nerve to Bektereff's and the ventrocaudal Deiter's nucleus. From there they pass to the posterior longitudinal fasciculus of both sides, the fibres passing upward through the pons and midbrain to terminate about the nuclei of the third, fourth, and sixth cranial nerves. From these nuclei, the impulses creating nystagmus reach the ocular muscles.

The pathway for the reaction movements of the body and its extremities are indirect. The impulses are intermediated, and those for the reaction movements of the body differ from those of the body extremities. The impulses arising from reaction movements of the body pass from the static labyrinth along the vestibular nerves to Deiter's nucleus, from where they go to the cerebellar cortex. Then going back, or downward again they reach the nucleus tecti, continuing onward through the tractus uncinatus to cross over to the opposite side to Deiter's nucleus and the ventrocaudal nucleus. From here they pass down in the Deiter's spinal tract to the anterior horn cells, and from there to the muscles of the body.

The pathway of reaction movements of the bodily extremities is from the static labyrinth along the vestibular nerve to Deiter's nucleus and the ventrocaudal accessory nucleus, thence to the dentate nucleus and to the cortex of the cerebellar hemispheres. From here they pass through the brachium conjunctivum to the red nucleus of the tegmentum of the opposite side. From this point, they pass through Monakoff's tracts to the lateral column of the cord on the opposite side, where they terminate about the anterior horn cells.

The pathway of the voluntary element of the reaction movements reach the cerebellar cortex through collaterals given off from the motor tract as it passes through the pons. These collaterals terminate about the cells in the pontine gray matter. These cells send neurons through the middle cerebellar peduncles to the cerebellar cortex (Braun-Friesner).

We have used the foregoing fundamental studies to form the basis of tests which consist inherently in the application of strong stimuli to the static labyrinth, and from the data thus obtained, by comparison of the findings in disease with those in health, we are enabled to localize the lesion more or less definitely in the static labyrinth.

From the tests of the function of hearing, we are enabled to estimate the status of the cochlea, and from the data obtained from the observation of the reaction movements, and the entire series of tests, we are enabled to differentiate cerebellar lesions from labyrinthine, and endolabyrinthine from retrolabyrinthine affections.

It is not my purpose to go into the finer details of all the tests. Time would scarce suffice in the limited space of one paper to do this portion of the subject justice. What I do want to emphasize is a series of practical tests, which, when applied, will give the clinician means more accurately to study the cases grouping themselves under our classification of the Ménière symptom complex.

To test the function of the cochlea, it becomes only necessary to know whether or not a patient can hear *sound* in the suspected ear. To obtain an answer to this, the possibility of sound being heard in the other ear must be safeguarded. To this end numerous "noise apparatus" have been devised. I employ the one devised by Neumann, of Vienna. With this apparatus in the opposite ear and in operation, the hearing may be tested by voice, whistle, or tuning fork. If sound is heard, the cochlea in the suspected ear is functioning.

The tests of the function of the static labyrinth are not so simple. When we remember that the *normal physiological stimuli* aroused in the static labyrinth during ordinary movements of the body produces no visible reflexes, and we call to mind the fact that *an increase* in the *intensity* of such physiological stimuli produces reflex movements in the eye muscles and the muscles of the body and its extremities, then we deduce that *failure to elicit* these *reflex movements,* upon the application of strong artificial stimuli to the static labyrinth means that the end organs in the semicircular canals are either impaired or destroyed.

This is the fundamental law regarding the functional tests of the static labyrinth. We can elaborate further: An increase, or a diminution in the ease with which these reflexes are obtainable, compared with a normal individual, indicates conditions of increased, or diminished irritability of these end organs. Increase or diminution in the intensity and the duration of the reflex is interpreted in the same way.

For purposes of eliciting these reflexes, and studying them particularly with regard to the nystagmus, we ordinarily may employ the following tests of the function of the semicircular canals. We assume that the vestibule is diseased, when we find that the semicirculars are involved.

1. The rotation test.
2. The caloric test.
3. The galvanic test.
4. The fistula test.[1]

Actually the results of stimulation of the end organs by the four methods is the same in all of them. As a result of the application of the stimuli, a movement of the endolymph is set up in the canals, which, displacing the cupula and its hair cells, starts the impulse along the tracts enumerated above.

From the application of these tests we determine

[1]The last named is not of use in the cases we are discussing.

whether or not the static labyrinth is functioning and when function is shown, we are enabled to estimate its degree. The technic of the tests is as follows:

1. *The rotation test.* The patient is seated in a specially constructed chair, and tilts his head forward 30° to bring the horizontal semicircular canals on as near a horizontal plane as possible. He closes his eyes during rotation. He is now turned ten times toward the right, at an even, constant speed. Then the eyes are opened, and the nystagmus is observed, with the eyes directed toward the opposite side to that toward which he was turned, namely, to the left. The duration of the nystagmus is noted. After a short interval, he is now turned ten times toward the left, stopped, and the duration of nystagmus noted.

The rotation test may be applied to the other semicircular canals by bringing them into the horizontal plane, i. e., by tilting the head in various directions. For example, to bring the *right* superior and the *left* posterior canal into the horizontal plane, the head must be tilted 90° forward, and then turned so that the face looks toward the right shoulder. Turing the face toward the left shoulder after tilting the head forward 90° brings the left superior and the right posterior canals into the horizontal plane. Thus there has been worked out a specific position for each set of canals, yet however much such information may be of value from the purely academic standpoint, in the present state of our knowledge, these refinements of the rotation test are of lesser practical value to us in our efforts to make a diagnosis of the condition of the static labyrinth. Those interested further in these details are referred to the recent work of Braun and Freisner for information on this subject.

For our purpose it is important to bear in mind this rule: The finding of a marked difference in the duration of the nystagmus following rotation to the *right,* and following rotation to the *left* indicates *that one side is not functioning;* and the side toward which we turn the patient which results in either absence of nystagmus, or the shorter duration of the nystagmus, is the side in which the disease is located.

2. *The caloric test.* This form of testing the function of the labyrinth enables one to distinguish between a functioning and a nonfunctioning vestibular apparatus. The test is based upon the work of Schmiedkam, Heusen, Cohn, Urbantschitsch, and Bárány.

The patient sits erect, and a stream of cold or warm water—colder or warmer than bodily temperature—is permitted to run through the external auditory canal. There must be no suspicion of the use of force; the stream must be so gentle that no change in intralabyrinthine tension can possibly be brought into being from the pressure of the water column.

Due probably to physical causes, the movement of the endolymph is started by the local change in temperature, and from this a reaction stimulus is started which arouses nystagmus. Using cold water, the nystagmus is toward the opposite ear, while when employing warm water, the nystagmus is directed toward the ear undergoing irrigation. If the static labyrinth is *not functioning, no nystagmus results.*

This outlines the test. There are many refinements of more or less value. Some of the more important to the consideration of our subject, I shall detail. By means of the caloric test it is possible, not only to determine the absence of function in a given static labyrinth, but we can also estimate conditions of relative irritability, conditions of depression, etc. To do this we modify the test somewhat.

We can use measured quantities of water, and determine with how small an amount at a given temperature nystagmus is arousable. If easily aroused, the labyrinth is oversensitive—in a state of irritability. If it requires a large amount of water, the reverse holds true. We can time the duration of the nystagmus after its onset. The more prolonged, the more sensitive the static labyrinth, when the prolongation is found to be beyond what experience has taught us to regard as the normal duration of the reaction.

Finally, we can fix the head in various positions, and thus center the stimuli more prominently on one or the other semicircular canal. This latter procedure has not given much data of practical import, however.

4. *The test by galvanism.*[2] This test is not of great practical value up to the present writing. There are many obscure factors as yet unexplainable by any knowledge at our command. In performing the test, both labyrinths may be tested or stimulated simultaneously, the anode or positive pole being placed over one ear, the cathode or negative pole over the other; or one labyrinth may be subjected to examination alone, one pole being placed over the ear to be examined, and the other pole, over an indifferent portion of the body.

The poles thus arranged, the galvanic current is gradually started and increased in strength until a nystagmus results. The strength of the current employed is noted, and this constitutes the figure to designate the degree of irritability of the vestibular apparatus. In stopping the test, the current should be gradually reduced, and not sharply broken off, in order to avoid the break contact shock to the patient. The resultant nystagmus is of combined variety including rotary and horizontal elements because all the semicirculars on the given side are involved in the stimuli and react to it.

The nystagmus takes direction toward the negative pole if that is placed over the ear. If the positive pole is used at the ear, then the nystagmoid movements are away from the ear under examination. The position of the head does not influence the character of the nystagmus.

There are some additional facts I wish to state regarding the galvanic currents and the reactions to them of the vestibular apparatus.

1. The nystagmus lasts after the current has been withdrawn. In other nerve reactions to galvanism, this is not the finding; the reaction ceases with the stimuli. The labyrinth does not react to faradic currents; other nerves do.

The relationship of the vestibular nerve, the one along whose fibres this stimuli passes to create the

[2]The fistula test does not concern us in the cases we are discussing to-night, and I forego its technical description.

nystagmus, to the cochlea and facial nerves, would lead us to assume that these three, situated deeply in the skull, would all be affected by the applied galvanic current. The cochlea branch and the facial nerve are unaffected by the stimuli which arouses reactions from the vestibular nerve and its end organs.

Finally, when the static labyrinth is totally destroyed the galvanic current still will produce the nystagmoid reflexes, although a stronger current is required than would be the case were the labyrinth intact. In the latter instance a current of from two to five milliampères being sufficient, while with a destroyed static labyrinth one of from five to ten milliampères is necessary to produce a reaction.

Applying the *reaction movements* in the form of tests, we base our knowledge on Báràny's work. If, after producing a nystagmus through rotation, the patient is told to extend his right arm straight in front of him, the arm will be found to deviate to the *side opposite to the nystagmus.* (Care must be taken that the patient is not cognizant of this, or he will correct the deviation and vitiate the test.)

If the caloric test is applied to produce the nystagmus, we note its direction. The arm on the same side as the ear tested will, if pointed in the frontal plane, *deviate always* in the *direction opposite to the nystagmus,* i. e., in the direction of the slow component.

In the presence of a spontaneous nystagmus, the pointing test is applicable too. If there is no spontaneous nystagmus present, we first induce it, by any one of the means already discussed, then we test as follows: Closing the patient's eyes, and resting his arm and forearm in an easy position so that his wrist is easily movable, he extends his index finger so that it just touches the examiner's hand. The patient then flexes the wrist, keeping his index finger extended. He makes contact with the examiner's finger, and then again flexes the wrist and then again straightens out the wrist. The examiner's finger remains in position. With a horizontal nystagmus to the right, which originates in the static labyrinth, the patient's index finger will deviate to the left. *In other words he will point in the direction opposite to the nystagmus,* if the nystagmus is of vestibular origin.

And this test gives us a point in differential diagnosis, in the presence of spontaneous nystagmus between endolabyrinthine and retrolabyrinthine or cerebellar lesions. In the latter instance, the pointing may not be opposite to the direction of the fast *components of the nystagmus.* This test is applicable to all the extremities.

Furthermore, according to Bárány we can differentiate as follows: When there is a lesion in the fibre tract between the cerebellar cortex and the anterior horn cells in the cord, *there is a loss* of the *reaction movements of the extremities.* Since these fibre tracts are collected in a small bundle, the lesion in the tract will affect numerous joints, in many directions. A lesion located in the cerebellar cortex only affects one joint, and the one joint only in one direction. Thus further data of differential value are provided.

A reaction movement of the body is evident only when it affects a plane other than the horizontal. When this occurs the patient falls.

In the presence of spontaneous nystagmus (or for that matter, after induction of a nystagmus by stimuli), the patient is told to stand up, with the feet placed together, and eyes closed. With nystagmus to the right, he falls toward the left. The position of the head alters the direction of his tendency to fall, according to which semicircular canal is brought into the field of testing. Thus with head turned 90° to the left he falls forward.

A loss of reaction movements of the body in the presence of a nystagmus, means disease in the cerebellar worm, or in the tract leading from the worm to the anterior horn cells of the cord, namely through the nuclei tecti, tractus incinatus and Deiter's spinal tract.

Summarizing then, we find that when the labyrinth is diseased, the hearing is lost, and we have in addition disturbances in balance, nausea, etc., and spontaneous nystagmus in the early stage, and later failure to arouse nystagmus upon tests applied to the labyrinth. The pointing tests corroborate the diagnosis of labyrinthine lesion. The disturbances of balance diminish rapidly in intensity. Nystagmus may be elicited by galvanism.

If the lesion affects the eighth nerve, we have disturbances in hearing, and labyrinthine symptoms, but these occur separately and not in combination. The disturbances increase progressively in severity. The static end organ is found less irritable than normal, and the nerve less susceptible to the galvanic test than normally.

If the nerve is involved in an endocranial lesion, tumor, etc., we will find other nerves involved, and the usual signs of increased endocranial pressure.

In *cerebellar lesions* the disturbances of balance do not decrease in intensity as they do in endolabyrinthine lesions, but they become more intense as time goes on. There are the characteristic reaction movements noted above, signs of endocranial tension, and neither the spontaneous nystagmus, the elicited nystagmus, nor the pointing tests follow the rules laid down above. The nystagmus is toward the diseased side instead of the opposite, *and this is pathognomonic.*

Finally, if the labyrinth is destroyed, galvanic tests showed a greater use of current to induce nystagmus. There is total loss of hearing, and total loss of reaction to stimuli from the static labyrinth.

If the vestibular nerve is destroyed in addition, there is no reaction to galvanism.

With all these tests in mind, let us return to the case history which forms my text for this evening's discussion of the Ménière symptom complex.

Upon testing the cochlea branch of the eighth nerve of the patient, it was evident that he suffered great loss in hearing in the left ear (affected ear), and some loss in the right. The difference between them might be stated as follows:

Left ear: right ear::1:5.

There was total deafness for the lower notes in the musical scale, the limit being somewhere above sixty-four double vibrations.

The vestibular apparatus gives interesting data. To the caloric test, the right ear responds normally;

the left ear shows great excursions of the eyeball to the opposite side. The reaction of the right to the left ear in terms of time, of onset of reaction being as follows:

R:L::3:1.

In other words, the affected ear is twice as irritable to the caloric test.

Upon rotation he gives a classical reaction. The rotation toward the diseased side gives the longer reaction. In other words, his disease is localized in the left static labyrinth.

Heretofore it has been customary to consider Ménière's disease as an entity, using the classical description given by the original observer. This was superseded by the use of the term, Ménière symptom complex, as defining a train of symptoms originating in a number of separate and specific diseases and conditions. We still find our literature concerned with this triad of symptoms, as arising from conditions of *hysteria* in which the vertigo is explained as the indirect action of circulating disturbances upon an oversensitive labyrinth. Again, certain abdominal affections, unaccompanied by toxemia, or hysteria, are laboriously worked out to show how they give rise to disturbances of balance. A floating kidney, a low state of blood pressure, being named as causes for the clinical picture. The pneumogastrics and the splanchnics have been held accountable. Biliary and renal calculi, and last but not least, autointoxication accompanying disease of the liver, the stomach, and the intestines are the factors.

Liver disturbances are reported by Stockton to be the sole cause of a given case, and finally gout and rheumatism play their parts in casual relationship, in the older reports in the literature.

What I design to impress, is the statement that the so called Ménière symptom complex, far from being the result of any of these conditions, is rather the *cause* for *symptoms* from the *stomach*, the *intestines*, the *liver, etc.* The triad are to be considered *only* in the sense of presenting the *predominating characteristics of a labyrinthine lesion.*

To attempt to classify and define the nausea and vomiting accompanying infections of the appendix, as a separate group of appendicular affections induced by the vomiting and the nausea, would be as logical as some of the reports of so called cases of Ménière's disease of *gastric, hepatic, renal,* or *intestinal* origin. The analogies might be multiplied to substantiate this *reductio ad absurdum.*

We are so wont to think of labyrinthitis in terms of its various infections that we have almost lost sight of it, as the *expression* of a *nonpurulent* disease. The so called Ménière symptom complex is as much a sign pathognomonic of the nonpurulent as it is of the purulent invasions of the labyrinth, and Ménière's symptom complex signifies in our discussion this evening *a nonpurulent labyrinthitis.* Once we clearly understand that a patient who presents the triad—tinnitus, deafness, and vertigo—whether or not he incidentally gives evidence of cardiac, arterial, kidney, or liver diseases (and parenthetically it may be noted that the afflicted are rather advanced in age, and as a class apt to show evidence of these diseases as a result of life's wear and tear), once the fact is comprehended that such a patient is the victim of a lesion in the vestibular nerve tract, which may be situated at any point, from the end organ to the brain and cord centres, but most likely located in the endolabyrinth, then such patients will be carefully submitted to all these differential tests, and a truer study of the Ménière symptom complex will result, and more definite ideas as to the treatment to be employed will be evolved.

At the present time, we have only this one fact: The total destruction of the labyrinth will cause cessation of the symptoms. Nature, often working rather slowly, accomplishes this end, but in selected cases, when a rapid recovery of the individual is necessary so that he may again take up his usual occupations, surgery presents the only positive remedy—by *ablating the static labyrinth.*

To date, this operation has not found favor in this country in the nonsuppurative lesions of the labyrinth, although it has been performed by most of us in the infectious conditions. Abroad, this condition is often operated on. The prognosis regarding life is unusually good, because we are then working in a clean field.

616 Madison Avenue.

DIRECT LARYNGEAL EXAMINATION.*

By John A. Pratt, M. D.,
Aurora, Illinois.

One of the great drawbacks to the universal use of the direct method of examination and the treatment of the larynx and its region, has been the want of a simple instrument and a simple technic. In the presentation of the Pratt electric laryngeal speculum we have taken at least a step toward the goal. The instrument is strong, simple, and durable, without too much weight.

It consists of a blade and a detachable handle that holds the cell. The light is a metal filament of strong candle power for its size, which adds to its brilliancy and durability. It can be carried in the pocket or visiting bag, and is as easily sterilized as a tongue depressor. The cell in the handle eliminates the cumbersome battery, and minimizes electrical trouble. In bronchoscopic work it cuts out one battery and one set of cords, and so simplifies our armamentarium.

The blade does not have a hood, for with the proper placing of the instrument it is unnecessary. The light is placed in the centre of the blade, one fourth inch from the end, and is set in the curve of the lip, out of the way of both vision and instruments. It has the advantage over the side lighted speculum that the larynx is perfectly illuminated.

The battery can be quickly changed, costs but thirty cents, and will give illumination for some hours. A switch on the handle allows the light to be continuous or intermittent. The instrument can also be used as a luminous tongue depressor.

Those who have used the Boyce dorsal position will see that the upright posterior position I advocate is simply a Boyce dorsal raised to an upright.

*Presented at the meeting of the Section in Otolaryngology of the American Medical Association, Atlantic City, June 6, 1912.

By comparing the two illustrated positions, here presented, it will be readily seen which is the easier. The view of the operator and position of the instruments are the same in both positions. The other advantage of the posterior upright position is that both the technic for this and for the dorsal position is the same, while if the anterior position is used it is necessary to learn a double technic. In the posterior upright position the head is steadied against the body and the left wrist of the operator touches the side of the patient's head, thus giving a feeling of security and assurance to both operator and patient.

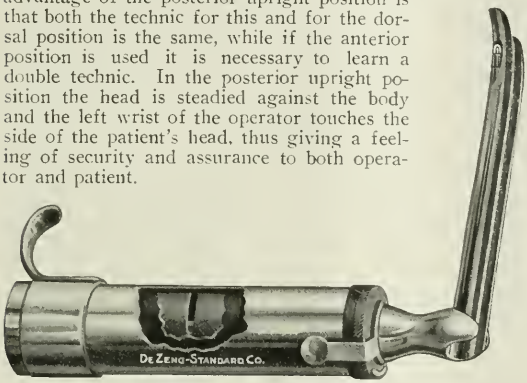

Fig. 1.—The Pratt electric laryngeal speculum.

In making a direct laryngeal examination two things are necessary, cocaine and the confidence of the patient. A four per cent. cocaine solution is applied down to, and including the epiglottis. I advise the beginner to practise the technic in the posterior upright position. The patient is placed on a stool about ten inches high or at a height convenient for the operator when standing behind the patient. The patient is told to look up into the operator's face, which gives extreme extension of the head and allows it to rest against the operator's body. The mouth is now held wide open, easier than closed, and a mouth gag is unnecessary. The speculum is now taken in the left hand with the blade toward the wrist. It is placed in the mouth and, following down the posterior pharyngeal wall, is passed over the epiglottis. The soft parts are then gently but firmly lifted forward by rotating the hand on the wrist, while the wrist rests firmly against the side of the head. The right hand is free to make applications or do operative work.

In the Boyce dorsal position, which is the best for children and anesthetic cases, an assistant is necessary to hold the head in position and keep the mouth open with a thimble mouth gag. Children under five years can be easily examined by wrapping them in a sheet, placing them in the dorsal position, and using the child's size blade.

232-233 Coulter Block.

THE ENHANCING OF AUDITORY ACUITY BY PSYCHOLOGICAL METHODS.*

By William J. W. A. Maloney, M. D., Ch. B., F. R. S., Edin.,

New York,

Adjunct Professor of Neurology, Post-Graduate Medical School; Attending Neurologist, Neurological Hospital.

Mechanism of hearing: Wittmaack, in 1907, published a series of ingenious experiments. He described how he took groups of guineapigs and exposed each group to one particular tone, so as to produce auditory fatigue for that tone. The tone was sounded in the ear of the guineapig frequently and periodically for many months. The guineapigs were then killed, and their cochlear membranes and nerves were examined histologically. He found that prolonged overstimulation had caused the cochlear nerve fibres to degenerate. The bundle which degenerated varied with the tone; thus, for a tone of high pitch, a certain bundle degenerated; for a tone of low frequency, another bundle degenerated. This degeneration began in the sensory membrane, and spread along the cochlear nerve toward its nucleus in the medulla.

Habermann examined, by histological methods, the sensory membrane and cochlear nerve in cases of defective hearing among workers in noisy trades. He was able to corroborate Wittmaack's results.

Hence when compound aerial waves of sound are converted into nerve impulses at the cochlear membrane, they are resolved into a number of elemental forms, each equivalent to a component tone, and each transmitted along a separate fibre or bundle of fibres of the cochlear nerve to the medulla.

These auditory impulses pass to a destined series of brain cells, in ordered sequence, so that a definite brain area is stimulated; ultimately the highest psychic centres are reached and the sound is perceived or heard.

We do not in everyday life

Fig. 2.—Posterior upright position.

Fig. 3.—Anterior upright position.

*Based upon a paper read before the Section in Otology of the New York Academy of Medicine, February 14, 1913.

perceive the tones which compose a sound. Only a musician analyzes what he hears; even he distinguishes tones seldom and consciously. Others perceive merely the end result of a complex mental process. In the brain the elemental tones, which result from the disintegration of a sound at the cochlear membrane, are grouped and regrouped until the final synthesis is completed. Then we hear. We are unconscious of the various steps in this building up. The final audible pattern we accept as a whole. Its details we ignore. Each sound is to us as a picture, with a more or less dominant feature by which we distinguish and interpret it. This dominant feature is a tone which plays in the sound a part somewhat analogous to that of the fundamental generator in harmonics. This dominant tone is the key to the interpretation of the sound picture; but to interpret the same sound pictures, different people may use different keys. We each may recognize in the same sound a different tone as the dominant tone.

Hearing is thus a complex mental process. A healthy person may not perceive sound waves which impinge upon his cochlear membrane. This fact is known to all of us. We who live and think in noisy cities do so mainly owing to this power to turn the deaf ear; and, when students, we actively exercised this power during many a didactic lecture. We experience daily in ourselves, therefore, a deafness due to distraction, preoccupation, lack of attention. With this deafness a certain amount of hearing persists. A sort of distant rumble mixes with our thoughts. To interpret the rumble a psychic stimulus is necessary. We must, as we say, *pay attention* to the sound.

In all hearing there are therefore two factors, a psychic and a peripheral. Occasionally the psychic functions almost alone, as when imaginary awful sounds pervade the darkness; sometimes, as when our name is mentioned, or when a loud shriek startles us, the peripheral is the more important factor. But, as a rule, the psychic is the greater. We hear, among the sounds wherein we live, only those which we wish to hear, only those to which we devote attention.

At a given moment we may not hear, owing to the competition for our attention. But patients who have a morbidly restricted power of attention may not be able to hear, even when they are listening. When the attention is morbidly limited—a condition which is perhaps seen in its most marked form in hysteria—one gets a deafness which is remarkable, in that it ebbs and flows with the amount of attention which is available for auditory impressions at the moment.

There is thus a form of deafness which we may call *psychic deafness*. By psychic deafness we mean not the "word deafness," or sensory aphasia, of lesions of the temporosphenoidal lobe, but that deafness which has its seat in the highest mental centres—that deafness which might be termed *perceptor deafness*, that deafness which is due to the psychic element in hearing that I have just emphasized, that deafness which exists normally in the preoccupied and pathologically in the hysterical.

The sclerosed arteries of the aged lead to a lack of nutrition in the brain cells, diminish the available cerebral energy, and lessen the power of attention. An old person can attend less to the stimuli from his environment; so he devotes most of his attention to his psychic stimuli—to his own thought. We say that he lives in the past, and recognize this state as natural to his age.

His power of attention varies from day to day, and from hour to hour, according to his freshness or fatigue. With this variation in the psychic element, the degree of deafness rises and falls just as in hysteria.

Together with the limitation and variability of the attention there is also a blunting of the sensory delicacy of the ear in the aged. Peripheral auditory stimuli are in consequence feebler and less insistent. The senile person catches only a word here and there unless he particularly focuses his attention on hearing. To be continually on guard, to strain to catch every sound, is beyond the strength of the aged. After a time the struggle is relinquished, the occasional, disconnected, meaningless, audible sounds are ignored, for it is speech, not isolated words which command attention in adults; and the silence of meditation in which the aged live gradually deepens. Few auditory stimuli, however, are greater to a person than the sound of his own name, or similar sounds intimately related with his personality. Hence, the frequency with which the senile deaf detect things about themselves which they may be not meant to hear, while they require impersonal topics to be communicated by shouting

Otologists are habitually concerned only with mechanical intervention in deafness due to changes in the receiving and conducting mechanisms of the ear. The wonderful technic of such intervention nowadays suffices usually to restore a perfect or a satisfactory degree of hearing in deafness due to obstructive and inflammatory causes. Little is attempted, however, for the relief of nerve deafness. Cases of complete nerve deafness, of complete destruction of the cochlear apparatus, or of total severance of the cochlear nerve are comparatively rare. In them there is no peripheral stimulus to awake the psychic element of hearing. The auditory associations are quickly lost. We, therefore, get in such cases complete psychic added to the complete peripheral deafness.

But some part of the sensory membrane, some fibres of the nerve, as a rule, escape. In nerve deafness, if the lesion is partial and relatively slight we know that usually the high registers are affected; sometimes the low; sometimes, more or less, the whole scale of the human voice. As the hearing retained may be not wholly inadequate for the rougher needs of life, the patient may become more or less resigned to the defect.

If the defect in hearing is more serious, if hearing is too impaired to permit a satisfying amount of communication with the world of sounds, the consequence varies according to the neuropathic tendencies of the patient. Although the lesion is stationary the deafness tends to increase. A certain degree of loudness, a certain imperative quality, is needed before he becomes conscious of sound. Below this threshold uncertainty exists. Uncertainty breeds helplessness, fear, and anxiety,

and necessitates a constant strain. A nervous exhaustion may arise, just as in any other prolonged mental strain, and the hearing shares the depression common to all the cerebral functions under such conditions. A definite psychosis may even develop. Or the patient may become resigned to his deafness, as so often occurs among the aged; he then grows more preoccupied with his other sensory impressions, or with his own thoughts, and acquiesces in the contented silence to which his hearing deteriorates. There is a constant tendency for psychic deafness to magnify a peripheral defect.

But Wittmaack's experiments teach us that in all lesions of the auditory nerve, except in the rare condition of its complete destruction, some power of hearing must persist; for the persistence of nerve fibres means persistence of the ability to detect the tones which these fibres subserve.

So few cochlear fibres may escape that their survival may not be detected by ordinary routine methods of examination and the patient may appear totally deaf. Unsuspected by the physician even a sufficient number may persist to allow the reestablishment of a very useful degree of hearing. In spite of the apparent totality of the deafness we may detect surviving tones if we carefully test the patient's hearing throughout the whole range of the scale of the human voice, by means of the Edelmann-Bezold apparatus.

These last cases in which practical deafness is present, but in which examination reveals an ability still to hear certain tones reemphasize the importance of the psychic factor in hearing. In such cases the peripheral apparatus retains a power to hear which the psychic factor ignores. The consequences are that the peripheral lesion appears greater than it actually is, and that to the partial peripheral deafness a total psychic deafness is added.

Just as the two factors, the peripheral and the psychic, are evident in hearing, so are they evident in deafness. Just as the psychic was incontrovertibly the mightier factor in hearing, so is it in deafness also. In the treatment of deafness the greater results may be expected from measures directed toward the restoration of the usefulness of the greater, the psychic factor.

In cases of complete nerve deafness there is complete and irreparable psychic deafness. Without auditory stimuli, hearing is impossible. If there is complete nerve deafness, if there are no healthy fibres, then no tones can be conducted, there is no basis for auditory education, and the only hope of the patient lies in the education of some other sense, either to receive the sound vibrations or to interpret the muscular movements of the speaking person. Helen Keller, the famous blind deaf cripple, is said to hear through her fingers. The usual way is to educate the patient in lip reading. The excellent results which care and patience can achieve in the totally deaf by lip reading are known to all. It spares the patient from complete isolation. But lip reading is often practised unnecessarily.

Good results are obtained by lip reading often in cases of medium deafness. Indeed, Mr. Wright, of the Wright Oral School of New York, contends that lip reading enhances hearing in the deaf. He cites a case of a young lady who was practically deaf and who after training in lip reading thinks she can hear speech better than she can read lips, although she is very proficient in the latter. Another patient of Mr. Wright's, after a few months' training in lip reading, suddenly found she was able to hear the telephone bell which had long been inaudible to her. The improvement in these cases is an improvement in the psychic deafness. These people had sufficient sensitivity in their cochlear apparatus to permit them to hear, but they ignored the auditory impressions. Lip reading taught them to attend to sound. Lip reading demands acute attention. The patient is trained to focus the attention on speech by giving them a fixed point—the lips—on which to concentrate whenever they are spoken to. The attitude of attention to hear comprises muscular movements of the head, neck, and eyes. When we attend to any speaker we look at him. Even the blind often retain this reflex attitude. To see and to hear are twinned as the horse's ear and eye. Indeed an otologist has told me of a cure of slight deafness which he achieved by correcting an error in refraction. Such patients with medium deafness owe their improvement in hearing to their increased ability to attend to what they can hear if they will. This method of inducing attention to hearing by eliminating all save visual distractions is an imperfect method. Properly to focus attention on hearing requires that distraction from every other sense should be eliminated. There should be no exception made, not even of vision.

Inasmuch as lip reading tends to concentrate the attention upon the vision, and to divert attention from whatever auditory impressions are still perceptible, it really imprisons a person and leaves him only a window through which to perceive the world. The seeing of speech cannot adequately replace the hearing of speech. Speech is the stimulus which normally retains attention upon auditory impressions of average intensity. Lip reading tends to discard this normal stimulus, and to produce psychic deafness for auditory impressions of average loudness. Psychic deafness should never be tolerated except in cases of total destruction of the cochlear apparatus. It is through the ear, and not through the eye that the deaf should be taught to hear. Only patients with complete nerve deafness should learn lip reading. For all other cases I think lip reading tends to be mischievous.

We have already too few senses. The exercise of all our senses is necessary to our proper mental balance. We ought jealously to conserve every sensory channel that we may possess. The importance of this may not come within your notice, but it appeals especially to us who are psychiatrists, and who recognize that the madness which sometimes accompanies deafness, and the madness which arises among prisoners in solitary confinement are one and the same process.

If in cases of incomplete deafness we thus repudiate lip reading, either because it conduces to psychic deafness or because it only indirectly tends to alleviate psychic deafness, what more efficacious procedure is available?

We saw that inconstancy was a pronounced feature of the deafness of the preoccupied, the hysterical, and the senile. This inconstancy depends mainly upon variations in the amount of attention which is allotted to hearing, and not at all upon variations in the peripheral auditory apparatus. It is obvious that if we could persistently focus the attention of the hysterical, or of the senile deaf, upon the auditory apparatus so that sound enjoyed a first call upon consciousness, we should cure the psychic deafness and we should maintain hearing at its maximum level.

We could by the same measure make all surviving tones immediately audible in cases of incomplete destruction of the cochlear apparatus. With the senile deaf such effort is not always desirable. With deaf mutes, deaf children, and deaf adults, it is not only desirable, but essential.

The problem of curing incomplete deafness is thus largely a problem of focusing the attention. How can this best be achieved? Let us first consider for a moment the factors governing attention.

Clinicians more or less consciously recognize that attention is an important factor in all deafness. They do not estimate the deafness of an hysterical woman by the degree to which she can ignore sounds; they measure rather her hearing capacity by the maximum acuity which she betrays. Similarly, they do not test the hearing of a person under circumstances in which there is competition for attention; when making auditory tests, they avoid as far as possible all sources of distraction. The cure of all forms of incomplete deafness lies wholly in the training of the patient to devote attention to auditory stimuli.

Every one has noticed in children who are straining to catch every word of a thrilling passage of a fairy tale, and in unsophisticated adults who are being made to marvel, the attitude, the arrest or slowing of breathing, the gaping mouth, the fixity of the gaze, or the closing of the eyes which accompany rapt listening. Attention to auditory stimuli is, therefore, obviously associated with conscious effort, with a feeling of inhibiting thought and all forms of sensory perception save the excepted sound. Consciousness during such attention is focused upon, and limited to the cells of the auditory area. Under such circumstances the activity of these cells is temporarily enhanced, even, may be, to the point of functioning spontaneously so as to produce veritable auditory delusions.

Normally attention is distributed among all our senses. Few of us are conscious of the feel of our clothes, or of the ring upon our finger, as touch stimuli we practically ignore. Of our muscular sense impressions we are seldom conscious. Vision absorbs the giant share of effortless attention. We are conscious of nearly everything we see. To a very much less extent do we attend to sounds. Practically the only impulses which can command attention when they are not of more than ordinary intensity, are the visual impulses. To devote our attention to any other sensory stimuli is again the problem of distraction. We must first liberate, as it were, the enormous amount of attention which is preempted by vision. This we do instinctively. Tea tasters and wine connoisseurs, when they wish fully to appreciate a flavor or bouquet, close their eyes as they taste or smell. I have already remarked the closed eyes or the fixed stare of the rapt listener. This minimizing of visual impressions, this liberating of the attention which is normally mortgaged to sight, enables consciousness to be focussed upon whatever sensory stimuli we wish to perceive.

We attend to what interests us. To say a thing is interesting is merely to say that it possesses the power to command our attention. The thing itself has seldom an absolute power over attention. Our interest in a thing depends upon the competition for attention which is existing at the moment. Thus the insistent aches which arise in the still watches of the night and the obsessing thoughts which pervade the darkness, have an interest for us only then, because of the absence of light, noise, and other external distractions. The obvious inference from these facts is that anything under appropriate circumstances can command attention; that anything can be interesting provided the competition for attention is in proportion to the intrinsic claims of the thing, and that to stimulate interest in anything it is necessary only to exclude distraction by other things. Expediency has made visual impulses interesting to the normal adult. Expediency confers an inherent interest upon touch, pressure, and auditory impulses in the blind. I wish here strongly to urge that training can make auditory impulses so interesting to those who have defective hearing that sound can be made to acquire a monopoly of their effortless attention. All one has to do is to diminish the distraction from the other sensory fields while one is training the patient to permit sound to establish a first claim upon consciousness.

To enhance the value of sound, one must temporarily produce the conditions existing in the blind. The acuity of hearing in the blind is solely dependent upon the principle of conservation of attention. I have found this method of concentrating the attention to be invaluable in the reeducation of tabetics. By blindfolding them, tabetics can be speedily taught to appreciate their residual kinesthetic images, and their surviving muscular sense impressions to such a degree that hopeless bedridden ataxics quickly learn to walk once more. The former treatment of ataxia was to concentrate the vision upon each movement, so that the patient really directed his walking by means of his eyes. That treatment, so often futile, seems to me to be very similar to the treatment of deafness by means of lip reading. The excellence of the result attained by the new method, by concentrating the attention in tabetics, will, I hope, be equalled by the results which will be obtained by applying this same principle to the cure of deafness.

Therefore, to reeducate a patient to hear, one first blindfolds the patient. You will find in practice that this blindfolding should be done about half an hour before each reeducational exercise. This enables the patient to dissociate his attention from what has been occupying his mind, and prepares him suitably, by anticipation, for the tasks which he is about to receive.

But beside thus liberating consciousness and re-

ducing the possibility of distraction by blindfolding, we can further insure attention by making each sound, so far as we can, imperative. In animals the quality of the sound, that of the cries of enemies, etc., doubtless acts as an imperative factor. In man, some remnant of this effective quality doubtless remains, and is often utilized by drivers of urgent motor vehicles. But the main element in a sound which demands human attention is loudness. Hence, these reeducational exercises should be begun with sounds of sufficient loudness to command attention, and only after progress has been made should the sounds be diminished in intensity.

But all concentration will not suffice to render audible the sounds which can no more be conducted by the cochlear apparatus. The tones peculiar to the surviving fibres can alone be rendered appreciable. The others, no matter how imperative they may be made, must remain inaudible. Urbanschitch failed so often in his efforts to cure the deaf by shouting to them, because he did not first distinguish what they could hear if they would. He might shout a tone forever without being heard if the fibres to conduct that tone were destroyed.

Obviously, in all cases of nervous deafness, we should, therefore, first test the patient with the whole range of the tones audible to the human ear. This we can do by means of the Edelmann-Bezold apparatus. We should map out the tones which the patient can still perceive between the two extremes of the scale, B 1 and G 2, and we should then make a chart of these residual tones. Having thus ascertained the tones which are still audible, by concentrating his attention and by giving the tone the imperative quality of loudness, we can train a patient, not only to perceive immediately, but also to detect these surviving tones in any sound picture of which they are components. To educate the patient to make these the dominant tones by which to interpret all the speech he hears is then merely a matter of time and persistence. When few tones survive, very patient education is necessary to make them conscious and useful. But the principle is irreproachable: If a tone can be conducted, it will be heard if it is made loud enough.

When we have so educated a patient that he hears again, we have not changed the quality of the sounds he hears; we have not increased the sensitivity of the cochlear apparatus; we have not enhanced the conductivity of the cochlear nerve. What *have* we accomplished? Why does he hear?

Before the training, which I have just outlined, was begun, auditory messages were passing along the intact fibres of the cochlear nerve. The training has not affected their nature in any way; no mechanical or physical change has occurred in the stimuli. Sounds which he formerly ignored have been brought to his consciousness. The patient was psychically deaf; he now psychically hears.

CONCLUSION.

We have seen in the course of this paper that as separate tones are conducted by separate fibres, complete deafness can arise only in cases of complete destruction of the cochlear apparatus; and, conversely, that if any nerve fibres persist in the cochlear nerve, the power to hear the tones these fibres subserve also persists. Many patients who, in the hurried routine of practice, are dismissed as deaf, may really retain a sufficient sensibility in their cochlear mechanism to permit of a serviceable amount of hearing. In such cases it is the psychic element which conduces to deafness. Psychic deafness always tends to magnify the peripheral deafness. For cases in which any degree of power to hear remains, lip reading is not advisable. The treatment is to remove the psychic element of the deafness.

Every case of deafness should be carefully and thoroughly examined in order to ascertain if any tones are still audible. If there are no audible tones, lip reading must be taught. If there are audible tones, a tone chart should be made. The patient should be blindfolded while the audible tones are reiterated in his ear. At first these tones must be made as loud as is necessary to make them perceptible, and later diminished in intensity according to the success of the educator. Ultimately the patient will perceive them, even when they are uttered with an intensity scarcely perceptible to the normal ear. Then when these tones are thoroughly taught, training in sound pictures, vowels, etc., of which these tones are an element, should be begun. Thenceforward it will be merely a matter of time and patience until a serviceable degree of hearing can be reestablished.

20 East Sixty-ninth Street.

THE TREATMENT OF TUBERCULOSIS.

Encouraging Results with Calcium Cacodylate and Calcium Iodide.

By Algernon Brashear Jackson, M. D.,
Philadelphia.
Surgeon, Mercy Hospital.

In the worldwide crusade made in recent years against man's arch enemy, tuberculosis, the various methods of sanitation, forced feeding, and fresh air treatment have almost completely overshadowed therapeutic attack. Unquestionably, great and good results have been accomplished by the sanatorium methods, but the author believes that too much assurance is given, and too much hope placed therein, and too little attention and too little effort are directed toward seeking for a drug or drugs that will at least *aid* in the struggle.

Hardly is there a drug in or out of the pharmacopeia that has not been employed in the treatment of tuberculosis at one time or another. From time to time investigators have heralded some medicament as a cure for the dread disease, but in the wear and tear of time and proof they have been neglected and cast aside as useless. For a time tuberculin occupied the centre of the stage, but soon lost its prestige because of the enthusiasm with which it was received, and general ignorance in the use thereof. However, at the present time, tuberculin is again coming into its own, because of a better knowledge of its use and limitations. While my firm belief is that when an absolute cure for tuberculosis is found it will be in the form of an antitoxic serum or vaccine, I feel that, in the meantime, diligent search should be made for some

drug which will arrest the progress of the disease and aid Nature in her efforts to cure.

It was with this thought in mind that I have endeavored to search for a means by the medical route to arrest the onslaught of tuberculosis, especially in its early stages. For many years having been brought in contact with the various surgical manifestations of tuberculous origin, and in many instances noting the utter futility of the ordinary surgical measures to produce any marked benefit, I was prompted to make these experiments. With the various methods in hand of recognizing incipient tuberculosis, there is hardly any excuse for any carefully observing practitioner failing to detect the disease in its early stages. So much has been written and said about these methods that I deem it unnecessary to go into any detail concerning them. In the citation of cases which follows, mention will be made of the employment of various means of determining the presence of a tuberculous infection in its early stages.

The term "cure" in regard to tuberculosis comes in for much argument, and will not be discussed at length in this article. Most of those rigid "sanitarians" who adhere strictly to fresh air treatment and forced feeding, or better "full feeding," speak of positive "cures." The author willingly admits that he has seen many patients return from tuberculosis sanatoriums who present every evidence of having been "cured." On the other hand, he remembers many patients sent home, bearing the label "cured," who have shortly returned to their sanatorium homes among the hills to die. Much of the sanatorium treatment is a school of instruction, and the result almost always depends upon the receptive powers of the individual, whether he returns home "graduated, cured, and educated." Many of the failures in sanatorium methods of treatment are due to the individuals themselves, who receive knowledge, yet do not heed its teachings, but instead return to old habits, old conditions, and old ignorances. The crusade against tuberculosis must be almost entirely educational, and it is not the purpose of this article to attack the sanatorium methods, but rather to praise them. But I do feel that enough attention is not paid to medication aimed directly at the disease itself. Too much faith is placed in educational sanitary methods alone, and too little—possibly justifiable because of the many failures—in the search for a method of medication which will aid in the cure by fresh air, nourishing food, proper rest, and a trained mind.

For several years I have made an ardent search for such a medical adjuvant. After many failures, both in following out the ideas in others and ideas of my own, some few conclusions have been reached. Naturally, the tendency of the over enthusiastic investigator is to see the result of his efforts through highly magnifying lenses. But on this point I wish to say that this work has been pursued with much painstaking care for a long period of time, in consultation with other medical men and chemists, so that enthusiasm had a chance to cool before this report was made.

After a careful sifting process, the drugs which seemed to aid Nature most in the struggle against tuberculosis were finally decided to be arsenic and calcium. With full regard for all sanitary measures, and in conjunction therewith, these drugs have been carefully tested and employed. The use of Fowler's solution in graduated doses showed such marked results that search for other arsenical preparations was made. Most naturally sodium cacodylate, because of the happy combination with organic arsenic, was chosen. It showed a marked advantage over Fowler's solution in that it could be given over a longer period of time with no distressing results.

Then, mindful of the observations made at autopsies of the lungs of those who had died of diseases other than tuberculosis showing old tuberculous lesions healed and cured by calcification, I turned to the calcium salts and began their administration. After employing the various salts of calcium, it was finally decided that the iodide unquestionably gave the best results. Much difficulty was experienced in getting a pure calcium iodide. Pure calcium iodide differs from the so called iodized lime, in that it consists of the pure binary compound CaI_2, whereas iodized lime contains large amounts of iodate as well as iodide. After obtaining the pure calcium iodide, the method of administration caused much concern, for it is a very unstable salt; but finally it was decided to dissolve it in glycerin. To make the solution more stable a small proportion of ferrous iodide was added. Hence the preparation I am now using contains to the fluid drachm, calcium iodide grains ten, and ferrous iodide grain one and one half, dissolved in glycerin. It will be noticed that the solution contains ferrous iodide to the extent of two and one half per cent., or just one half of the strength of the official syrup of ferrous iodide. Moreover, the sugar in the official preparation has been replaced by glycerin, which has the advantage of being more readily absorbed and better borne by the stomach. Thus we have a glycerolate of calcium and ferrous iodides. Pursuing the calcium and arsenic therapy further, I had made a calcium cacodylate, which is administered in conjunction with the glycerolate of calcium and ferrous iodides. The calcium cacodylate was prepared in sterile solution and placed in sterile ampoules containing three quarters of a grain each, thus facilitating the hypodermic administration of the drug. The calcium cacodylate or dimethylarsenate of calcium was carefully tested for traces of arsenic not in organic or masked form and found to be entirely free from it.

After careful employment of calcium cacodylate in incipient tuberculosis, it was noted that the results obtained were more satisfactory than from the use of sodium cacodylate. This was interesting. Upon investigation it was found that the proportion of organically combined arsenic in the calcium salts amounts to 40.7 per cent., whereas the amount in sodium cacodylate is thirty-five per cent. This difference alone, however, is not sufficient to account for the difference in the therapeutical value of the two salts. Why the calcium salt should appear to do better work than the corresponding sodium salt cannot be explained on chemical grounds.

As to the administration of this combination of drugs it was my intention from the first to in-

ject the calcium cacodylate intravenously. After some time, during which I compared the results between intravenous and intramuscular injections, the conclusion was reached that the intramuscular route was just as satisfactory, less dangerous, less trouble to the operator, and less inconvenient to the patient; although, even at the present time, the intravenous injection is often used. It must be noted that on several occasions, almost immediately after the intravenous injections were made, the temperature dropped. While I regard this occurrence of little or no importance, for there is no clear reason for it, I feel that it is only fair to mention every observation that has been made in this line of work. The method now followed, after a careful analysis of all conditions, is as follows: Daily intramuscular injections of calcium cacodylate, three quarters of a grain each, are administered for one week, and after the first week, injections are given every other day, for a period of four or five weeks, or longer, unless contraindicated by some unusual development. The glycerolate of calcium and ferrous iodides is begun at the same time, giving thirty minims (equivalent to five grains of calcium iodide) in water three times daily after meals, gradually increasing the dose until one drachm of the solution, or ten grains of the calcium iodide, are given. Up to the present time no larger dose has been given, but I see no reason why more should not be given, for it produces no untoward effects and is easily tolerated by the most sensitive stomach. I have even tried giving it before meals on an empty stomach, with the result that it acted as a stomachic and increased the appetite.

Now arises the question, How long shall such treatment be continued? In incipient cases of tuberculosis (including the pulmonary and the surgical type), where the results are most promising, I have unhesitatingly persisted in this line of treatment until the case cleared up, and even thereafter continued occasional medication. For example, injections are given once or twice a week, and thirty minims of the glycerolate are given twice daily. This will be best shown in the report of cases which follows. The method of treatment has been given a complete trial in every variety of tuberculous and mixed infections. In acute miliary tuberculosis the result was positively nil. In mixed infections some improvement has been noted, but there are no "cures" to report. In incipient and surgical cases the results have been indeed brilliant, and it is to this class of patients that we turn with the glad hope, that in calcium cacodylate and calcium iodide there is for them a "cure." It will, however, be understood that in all cases treated the customary rules concerning fresh air, rest, nourishing food, and educational campaign have been thoroughly observed. In the report of cases which follows, a studied effort is made to have them as brief yet explicit as possible, aiming not to go into detailed symptoms which every physician knows to accompany the various phases of tuberculous infections.

Case I. The first case upon which this treatment was tried was a typical one of a rapidly progressive mixed tuberculous infection. The young woman, professional nurse, was under the care of Doctor Minton, who received the consent of her family to try this new method, since all other hope had been abandoned. Injections of calcium cacodylate were given daily for the first week accompanied by thirty minim doses of the glycerolate of calcium and ferrous iodides three times daily. At the end of the first week there were noticed some encouraging results. The morning temperature went to normal, and the afternoon fever was lower than it had been for some time. The patient said she felt better, but we believed this personal observation to be of purely psychic origin. The cough became easier and freer with increased expectoration. Injections were continued every other day, with the same dose of calcium iodide. About the fourth week she began losing ground, which continued until her death, two months later.

Case II. In a young man after an attack of pneumonia (possibly pneumonic phthisis) a cough developed. Examination of the sputum showed tubercle bacillus. Physical examination indicated involvement of the upper portion of the right lung. He was receiving the routine treatment when I received the permission of Doctor Hinson, his attending physician, to institute the calcium treatment. When I first saw the patient the greater portion of the right lung was involved, the cough dry, hard, and distressing, temperature, a. m. from 99.5° to 100° F., pulse averaging 120, and respiration 30. Further examination proved the existence of a mixed infection. He was very weak and exhausted, unable to sleep because of excessive night sweats and cough. Injections of calcium cacodylate and thirty minims of glycerolate of calcium and ferrous iodides were begun at once. At the end of ten days his cough was easier, expectoration free, night sweats had ceased, the morning temperature was normal, and the evening temperature slightly lower, though there was no change in the pulse rate or respiration. The injections were then given every other day and the same dose of calcium iodide continued. His appetite improved, his weight increased, and he felt so much better that he insisted upon sitting up every morning.

For some time he made rather marked improvement, but by degrees he began to lose ground, if the temperature is taken as a guide, for that is now constant. In the right lung he has two large cavities, marked dyspnea, and some pain. Up to this time, however, there is apparently no involvement of the left lung, his weight remains the same, his appetite is good, cough is slight, and that only in the morning upon rising. He says he feels very good, but while the line of treatment is still being carried on, I have not much hope in bringing about anything like a favorable result.[1]

The reports of Cases I and II, though not favorable, I regard as more interesting and essential to a true and faithful account of my experimentations than the favorable ones which follow. Together we are all seeking after truth, and the truth concerning a failure may be more helpful than the truth concerning a success. Undoubtedly some measure of improvement was noted in both cases, but the struggle against a mixed infection is indeed the hardest problem with which we have to contend in tuberculosis. I feel quite certain that the tubercle bacillus unaided is an enemy that can be readily conquered. But it is when it has as its allies other pyogenic organisms, that we are unable to cope with the disease. The strain on human vitality and lowered opsonic index, are too great when the joint foe is met, but with a pure tuberculous infection alone, not of the miliary type, there is a chance for ultimate recovery. Furthermore, success depends almost solely upon the early recognition of the disease, and the hearty cooperation of the patient.

In the reports of patients which follow, all were seen and recognized in the early stages of the disease, and the unfortunates were impressed with the fact that their cooperation was a most essential factor in the cure.

[1]Patient has since died.

Case III. Young lady, aged nineteen years, seamstress, came to the office complaining of feeling tired all the time, loss of appetite, afternoon headaches, slight "tickling in the throat," tendency to cough in the morning, and night sweats. There being a tuberculous family history, she felt that she was in the clutches of the dreadful disease. Examination at the time (morning) showed a subnormal temperature 97.3° F., pulse 90, respiration 26, slightly impaired resonance at the apices of both lungs, and moist râles during normal respiration, which cleared up on forced deep breathing. (This last sign I have even noticed in many persons not tuberculous, but who habitually are shallow breathers.) She was given advice as to method of living, told to get weighed, and return that afternoon, at which time her afternoon temperature was taken and found to be 100° F., sputum test was negative, but von Pirquet test showed a positive reaction. The calcium treatment was begun at once, the cough became loose with increased expectoration, in which were found the tubercle bacilli. By the fourth week the cough had entirely disappeared, no night sweats, the evening temperature was normal, although the pulse remained at 90. In six weeks patient had gained ten pounds, enjoyed an increased appetite, felt stronger, and was free from headaches. At the end of eight weeks she appeared normal in every way, both the von Pirquet and Moro tests being negative upon two trials each. The regular routine treatment was carried out in her case, even increasing the glycercolate to fluid drachm one, three times daily. She now reports once a week for observation and seems to enjoy the best of health. It remains to be seen, how long her "cure" will last.

Case IV. This case is particularly interesting in that two years previous the patient had been discharged from a sanatorium graduated and "cured." A young man, of twenty-seven years, butler, who had a remarkable knowledge of tuberculosis, its symptoms, and various rules for self preservation. He had lost weight, had an afternoon temperature of 99° to 100° F., had a "hacking" cough, dry, and to a mild degree painful, and night sweats every other night. Recognizing his old trouble, he sought my advice about returning to the sanatorium. He was so well schooled in hygienic matters that I prevailed upon him to remain at home and take the calcium treatment. Sputum and von Pirquet tests negative, but Moro test showed a slight reaction. Physical examination showed impaired resonance in the apex of left lung, decided moist râles, and what appeared to be a cavity about the size of a silver dollar, in the left subclavian region. The right side appeared normal except a slight lagging on inspiration, evidently caused by old pleuritic adhesions. The calcium treatment was instituted, and I had the full cooperation of the patient in every detail. At the end of three weeks all his symptoms had disappeared. Treatment was continued for eight weeks all told. He reports once a week for observation and now suffers no further inconvenience.

Case V. This case records a most complete failure. A man was admitted to the wards of Mercy Hospital with general debility and fever of an obscure nature. Diagnosis of acute miliary tuberculosis was soon made. Calcium treatment was begun at once and continued for two weeks but never at any time were there the slightest signs of improvement. To keep patient longer was considered hazardous to other patients, so he was sent to a hospital for the tuberculous, where he soon died.

Doctor Hinson has kindly kept records of several cases under his care which have been benefited by the calcium method of treatment. The incipient cases turned out well; in one chronic case he reports a marked improvement while the patient was available, but inability to get regular treatment impeded the progress which was being made.

Without citing in detail the many other cases I have treated or had under observation, I wish to sum up in a general way. In the cases of a surgical nature (and it was in such cases that the original experiments were made), particularly those of glandular origin, all patients made excellent progress toward recovery. In incipient cases the patients responded readily to treatment, and showed improvement marked by increased weight, cessation of cough and night sweats, as well as an increased percentage of hemoglobin. Those patients who have been kept under observation have shown no signs of return of the active symptoms of the disease. Even in surgical patients who underwent operation the calcium therapy was carried out, and seemed to hasten recovery and healing of the almost inevitable sinuses usually left therefrom. The experiments were all interesting, none seemed harmful, and many were gratifying as to results obtained. The results are herewith given to the profession for just what they may be worth, with the hope that they will stimulate further research along this line by more acute observers and better trained minds.

I wish at this time to express my gratitude to Doctor Minton and Doctor Hinson for their cooperation in this experimentation, by bringing cases to my notice, their skill in applying treatment and keeping faithful records. I beg to thank Mr. Vanderklede for his untiring zeal in making chemical and toxicity tests and furnishing me the drugs with which to work. Finally, I must acknowledge my gratitude to Miss Whiteman, professional nurse in my employ at the time of these experiments, now head nurse of Mercy Hospital, for the faithful manner in which she went to the homes of patients to give injections and take records of the many cases under our care.

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SEXUAL PROBLEMS OF TO-DAY.

With a Case of Hysterical Insanity Caused by Excessive Masturbation.

By B. S. Talmey, M. D.,
New York.

Harvard's president emeritus, Dr. Charles W. Eliot, asked by the writer for his opinion of *Genesis*, answered that the emphasis upon sex knowledge as a cure for the social evil and the neglect of the ethical side of the question compel him to withhold his approval of the book. Sex knowledge, says the venerable professor, will not have the much vaunted influence, for the medical student, with all his knowledge, is not more chaste than any other young man of the same age.

This thoughtful criticism, which could be directed against every agency for the dissemination of sex knowledge, such as, for example, the Society of Sanitary and Moral Prophylaxis, gave the writer a good deal to think about. Has sex knowledge no intrinsic value whatsoever? Should a book written by a physician in the interest of preventive medicine deal with sexual ethics? After much thought the writer is satisfied that the ethical part is best left to the minister, who is the natural teacher of morality. If the latter, with all the authority of religion, cannot prevent sex irregularities (Rev. J. M. Wilson, in the *Journal of Education*, 1881, says that emotional religious appeals are far from rooting out sensuality and sometimes even stimulate licentiousness), the feeble voice or pen of the physician will surely be powerless. The

physician's work should be confined to preventive and curative medicine.

From another side the writer was attacked for preaching in his book the morality of fear. It was objected that "burglary is wrong, irrespective whether the burglar gets or does not get caught." Now the morality of fear is a pretty good working morality. The Bible (*Exodus,* xx, 5 and 12, and xxii, 23, the observance of a command carries its reward and the transgression of a prohibition its punishment) often preaches the morality of fear, and upon the Biblical morality all the western civilizations are founded. Morality is the arrest of the instincts by the intellect, and the intellect always asks for the ethical why. An immoral act must harm somebody. If humanity suddenly perished, there would be no morality. There is no moral precept which is not a social precept, no other duty except toward one's neighbor. If human sanitation and the universal intelligent use of venereal prophylaxis abolished venereal diseases there would be no medical sex problem, although there might still remain some sex problems for the sociologist. But venereal diseases are still here among us, and in teaching preventive medicine we have to show to the violator of the usages of society, not only the harm he may do to others, but also to himself, just as we warn the drunkard and the glutton against excesses in food and drink. This is what the writer has done in *Genesis;* he tried to teach preventive medicine by the dissemination of knowledge and not to teach morality.

But, says our esteemed professor, knowledge does not suffice to suppress the medical student's unchastity. Hence to spread abroad a knowledge of sex would appear to be of doubtful value. In the following paper the writer will try to answer the dilemma.

Three pathological entities have their origin in irregularities of sex: 1. The venereal diseases; 2, neurasthenia; 3, hysteria.

About the first group, the three venereal diseases and their sequels, very little needs to be said. It is common knowledge that they owe their origin to prostitution, open or clandestine. If prostitution could be banished from our planet, the generation following such a happy catastrophe would be free of venereal diseases. But as humanity seems to be now constituted, we shall have to wait a long time for the spontaneous disappearance of this plague.

Even in the ideal state of society dreamed of by our philanthropists or socialists, prostitution will still be in existence. With all due respect to the investigations of our social committees, only a very small percentage of prostitution is due to economic conditions. Poverty and low wages have seldom compelled a girl to embrace this profession. If she is not vicious and deformed in mind, there is not a girl in the large cities, such as New York, London, Berlin, Paris, etc., where there is a chronic scarcity of domestics, who could not find board and lodging and good wages into the bargain within a few hours of search in any employment office, without the need of carrying her body to market. With few exceptions, only the absence of moral principle or will power will make a girl the victim of the white slaver. A surprisingly large percentage of people are of such low mentality that they are incapable of living what is termed a normal life. Hence the thirty-five thousand girls in our city who prefer prostitution to domestic labor. Those investigators who found a variety of circumstances, such as poverty, low wages, improper home conditions, lack of training, desire for amusements, pretty things, etc., responsible for seventy-five per cent. of prostitution were not very critical and were easily deceived. This may happen to the shrewdest investigator. For a moral defect, or frequently the total absence of the moral nature, is sometimes cloaked by an astute intelligence which is invariably perverted and directed toward purposes of ill. Dr. Pauline Tarnowsky (*Etudes anthropométriques sur les voleuses et prostituées*) says of her sisters: "Professional prostitutes are imperfect beings, affected by arrest of development, generally due to morbid heredity, and present mental and physical signs of degeneracy in accord with their imperfect evolution. They accept their abject trade agreeably and do not want to change it. Laziness and absence of moral sense are the principal traits characteristic of the prostitute." Even the few who were originally normal and only forced into this unfortunate profession are loath to leave it. Less than two per cent. of immoral women reform. The voluntary segregation of the prostitute is so complete that she loses all contact with human life, and the influence of the segregated life causes an arrest of her mental development.

Prostitution, therefore, will always be with us as long as we continue to breed mental defectives. With the presence of prostitution, the venereal scourge will rage among us, unless we can convince men to stay away from contamination.

The other disease due to sexual irregularities is the syndrome of symptoms known under the name of neurasthenia. While neurasthenia is by no means exclusively due to sex anomalies, still the percentage of neurasthenia of sexual origin is so large that it is always well in the presence of this anomaly to look for sex as a fruitful source. There is an intimate relation between the genitals and the head.

The two perversities, masturbation and onanism (congressus interruptus of Onan), are oftener the cause of the general breakdown than excesses in normal sex life. Of these two, masturbation is the more dangerous because its practice usually begins in the immature child, and, if indulged in to excess, leads to the fatigue and exhaustion of the central nervous system and of the nerve system of the organs.

Masturbation is often the cause of the third group of symptoms, known as hysteria. In nearly every case of hysteria a primary lesion of the sexual emotional sphere exists. According to the modern theory, especially promulgated by the Freudian school, hysteria is the result of a conflict between the libido and the sexual repression, the hysterical symptom being a compromise between both psychic streams. Hence these symptoms are mostly met with in masturbators who have given up their practices for one reason or another. W. Stekel

(*Sexual Problems*, February, 1913) says that the neurosis seldom breaks out during the period of practising masturbation, but regularly after its repression. One of these rare cases where masturbatic excesses form a prominent symptom of the hysterical attack is the following case:

Case. Mrs. W., aged forty years, married, mother of two children, had always been well. As a child she had measles and whooping cough. She began to menstruate when seventeen years old and had always been regular. When she was twenty-two years old, a young gentleman used to call on her and frequently took her out to theatres, dances, etc. The parents being Hebrews and fearing that their daughter might become too attached to her Gentile friend asked him to stay away. At that time the patient seemed to be very little affected by his absence. Still she refused to get married, although she had many proposals. She remained single until she was thirty-five years of age, when she married her cousin. Eleven months later her first child, a girl, was born, whom she nursed herself. At that time the mother noticed a certain change in the patient's character. While previously she was very neat and particular as to her personal appearance, she became careless and neglectful of herself. Three years after the birth of her first child she gave birth to a boy in term. Both confinements were normal. The boy was circumcised on the eighth day, and two days later the patient became a raving maniac and tried to kill her nurse, under the delusion that the latter was planning to kill her infant boy. This was the first time she showed any symptoms of mental derangement. When the nurse was sent away and another nurse came to take care of her, the patient became quiet. But frequent attacks of excitement now followed periods of comparative health. Spells of elation with delusions of great riches and a boisterous demeanor alternated with fits of depression with the delusion of living in dirt which she tried to remove by continually washing her hands. Several weeks after her second confinement, while with her mother down town, she suddenly turned to her mother and said: "I wish I could have circumcised my admirer of years ago."

In September, 1912, the husband returning home from business found the patient in the bathroom in the act of violently masturbating. When he asked her what she was doing, she began to cry and accused herself of being a degenerate, that she had been doing it all her life and that her mother knew all about it, which, by the way, the mother denied.

It was now found that the patient was practising masturbation continually for hours in the day or in the night, in the presence of others even, of her mother, husband, or nurse. When her hands were tied she manipulated with her thighs. For that reason she was sent to a sanatorium. She remained there five weeks only and returned home where she gave herself again to her favorite habit. On New Year's day, 1913, the patient was brought to the writer's office for examination.

Status: The patient was a well built woman with regular features, with grayish hair and looked her age of forty years. Her appearance was slouchy, her speech somewhat stuttering which she did not have before her sickness. Her thoughts seemed to be occupied with something else while talking and she answered questions with reluctance. She was looking distrustful and timid, otherwise her behavior was quite normal. Her pupils were of equal size and not dilated, but the pupillary reactions were somewhat sluggish. The knee jerks were normal. There was no ancestral mental taint. She related that her menstruation had set in at the age of seventeen years. About that time she said she had begun the practice of masturbation, but only once a week. Her answers about the beginning and frequency of her practices were somewhat uncertain and indefinite. There was a certain dullness of memory noticeable.

Examination of the genitals showed the clitoris to be elongated, about three centimetres in size, otherwise nothing pathological was found about the vulva. The uterus was retroflexed, and a small cyst of the size of a hazel nut was felt at the left ovary.

While in the doctor's office the patient's behavior was perfectly normal and ladylike; her entire character changed as soon as she returned home. She was now excited and extremely restless. She ran up and down her room, and tried to tear her hair and clothes and to throw herself out of the window, so that the two nurses were scarcely able to restrain her. Finally she began to masturbate and continued in the practice for several hours until she became entirely exhausted and fell asleep. During her practices she was red in her face, full of perspiration, but seemed to find no satisfaction.

The following day the patient was perfectly normal, but during the night she again had an attack of masturbation that lasted for several hours. She woke up in the morning in a bewildered, confused state. She cried and screeched violently and had the suicidal impulse to throw herself out of the window. She tried to tear everything she could lay her hands on, her clothing, bedding, etc., and she refused to take any food because it was full of dirt. While she was in this state, the writer was sent for. As soon as the patient saw her doctor she became quiet, but her speech was hesitating and she answered questions in monosyllables. She complained of headaches, and a fibrillary trembling of the muscles of the left side of the neck was noticeable. When the commitment to an asylum was urged the patient was satisfied to go.

The night following, the patient was perfectly quiet and slept well the whole night. In the morning, January 4th, she told her mother that she was the Supreme Being and decided to call upon her doctor. In his presence she seemed to be perfectly reasonable. She was informed of the locality and of time and observed everything. Asked whether she really thought that she was the Supreme Being she smiled and answered that she had dreamed it. She seemed to be well satisfied with herself. She was amiable, gay, and obedient, and when she lay down on the operating table she became hilarious, giggled in a silly way, and asked whether she should sing and dance. The retroflexion was corrected and a pessary introduced to keep the uterus in place.

The following few days the patient's behavior was changeable; sometimes she surprised by her reasonable answers to questions requiring judgment, at other times she thought she was very rich, was noisy and obstreperous, peevish, obstinate, and disagreeable. In the night of the seventh of January the patient was sleepless and masturbated continually. When her hands were kept tight by her two nurses, she executed certain movements with her thighs. The following day the patient remained in bed and was apathetic. She did not utter a word, refused to take food, stared at everybody, had a frightened look, and did not seem to recognize her surroundings. Yet when the writer called in the evening, she correctly gave his name, but answered with low voice and very reluctantly. She seemed to have difficulty in recollection. Her countenance was dull and expressionless. As soon as the writer turned to leave her, while still in the hall, she began again to masturbate.

The differential diagnosis between paretic paranoia and hysterical insanity is not very easy in this case; still the fact that in the presence of her physician, to whom she had taken a liking, the patient was more or less rational, shows that we have here a case of hysterical insanity, apparently engrafted on a masturbatic neurosis. The organism weakened by the excesses, only needed the shock of the separation from her admirer to cause the mental breakdown. Still, the repression seems to have been complete until the boy's circumcision, which recalled to her consciousness what could have happened to her admirer, too. All the time, in her subconscious state, she harbored the wish of her admirer's conversion to her creed. If his circumcision could have been effected, there would have been no obstacle to their union. This subconscious argument is partly revealed when she tells her mother of her sorrow at not having circumcised her admirer. Then she would not have married her present husband and would not have the boy, who by his circumcision recalled the entire tragedy to her memory. The subconscious wish is not to have

the boy. This wish explains her suicidal inclinations. The law of psychic life, says Stekel, is the law of talion: No one kills himself who did not wish to kill somebody else. The patient's accusation of the nurse's intention to kill the boy only betrays her own subconscious wish. There is a mental conflict in her case, and the resultant compromise of the conflict causes the sexual wishes to be consciously rejected and unconsciously accepted.

This case shows that the hysterical symptoms do not always follow the repression of masturbation as announced by Stekel. But whether the symptoms follow the repression of masturbation or the hysterical patient continues her practices, hysteria, in the majority of cases, owes its origin to masturbation. It is, therefore, quite a mistaken idea to consider masturbation as an innocent pastime to be laughed at, especially when it is practised by young children.

Our missionary work must, therefore, begin in the nursery. The drunkard is not expected to embrace temperance by acquiring the knowledge of the injurious effects of alcohol upon his soul and body. His impaired will can not resist temptation. He must be taught to be temperate before he becomes a drunkard. The same is the case with the boy who has once tasted illicit venery. All the preaching will generally be for naught. Knowledge at this time comes too late. The young man who has gone through all the suffering of gonorrhea and syphillis, as soon as he is cured and sometimes before, forgets everything, under passion fanned to resistless impulse, and associates again with meretricious women. His practical experience, just as the theoretical knowledge of the medical student, is not powerful enough to keep away a man from illicit indulgence, once he has tasted the forbidden tree of knowledge.

Hence the lessons in sex matters must be given quite early. It is very unfortunate that even the cultured public has not learned yet that the young child, even the infant, shows some sex manifestations. The general public is unwilling to be enlightened about the genetic functions of the child. One does not need to go as far as Freud's school and reduce the most innocent infantile natural activities to the emotions of sex; still it is agreed among the keenest observers that, if infants and small children are not carefully watched and protected against themselves, lewd servants, and ignorant mothers, autoeroticism will be established at such an early period that the first lesson in sex instruction will, as a rule, come too late. For masturbation, once it has become a habit, will seldom be relinquished until normal sex relations take its place, instruction or no instruction. Such pamphlets as "What a young boy ought to know" or "What a young girl ought to know" show a touching naivété. Young boys and girls, if of the age to understand such pamphlets, do not need to know anything, for the simple reason that they know everything, and in a more prurient way than their elders. It is the height of absurdity to give lectures on sex problems before classes in high schools, where a large percentage of the boys have already passed through all the stages of gonorrheal infection and a good many of the girls are addicted to the practice of autoeroticism. After such habits have been acquired, lectures will be of no avail. We must bring up our children in such a way that they will reach puberty without any kind of contamination, either by masturbation or by prostitution.

Only upon such children will lectures on the dangers of sex irregularities have great influence. If the medical student of Professor Eliot had begun the studies on the pathology of syphilis and gonorrhea and had known the dangers of the venereal scourge before he ever had a taste of sex, it is very likely that with the knowledge of the danger lurking, not only to himself but also to those dearest to a man's heart, his future wife and children, he would abstain from the association with meretricious venery. But when the medical student began to gain the knowledge of sex, it was too late for him to resist. Like the habitual drunkard, he had lost the power of resistance.

Hence lessons for boys and girls at the period of puberty, if not preceded by preventive measures during infancy and early childhood and by lessons in the propagation of plants and of animals, are not only of no value, but may even do more harm than good. The descriptions of the sequelæ of venereal diseases make the young people desperate and often cause suicide or wanton recklessness.

Boys who have passed puberty before they have had the opportunity of receiving proper instruction in sex, need altogether another kind of instruction, namely, lessons in personal prophylaxis. The objection that to teach personal prophylaxis against venereal infection would remove the most effective obstacle to sexual indulgence, i. e., the fear of infection, simply shows the ignorance of the elementary force which, indulgence in venery once tasted, drives the boy into the arms of prostitution, fear or no fear. The young man himself, once deflowered of his virginity, is of no concern any longer. All the lessons in personal prophylaxis will not have the least influence upon his conduct in life one way or another. But personal prophylaxis may save his wife and children from a life of invalidism and even death.

The girl, on the other hand, should be shown what she has to expect from the career of prostitution. The average duration of life in the career of the venal woman is eight years. (Clifford G. Roe, in the *Woman's World*, September, 1909, asserts that the average life of these girls is about five years.) If the girl knew these facts it is inconceivable that even the mentally defective girl would prefer this short life of silks and satins and then the morgue to a respectable life even of poverty. These facts have to be imparted, not only to the working or the servant girl, but also to the girl of the middle classes; for Belaschko's statistics show that thirty-four per cent. of these girls belong to the middle class families, and three per cent. of them are college graduates.

Now, what is the task of the societies of sanitary and moral prophylaxis? In the writer's opinion, they have the important office first to instruct parents in the science of sex. The majority of parents have no more knowledge of sex than what is known to every animal by instinct. Mr. Pinard,

in *Chronique médicale*, 1903, p. 488, says: "Jusqu'à présent l'acte procréateur n'a été qu'un acte instinctif tel qu'il existait à l'âge des cavernes, c'est le seul de nos instincts n'ayant pas été civilisé. L'acte est accompli à l'aurore du XXe siècle comme à l'âge de pierre." Such instinctive knowledge suffices not to influence the children either by preventive or by positive measures.

The societies of sanitary and moral prophylaxis have the further task of teaching the teachers. Just as the specialist in genitourinary diseases has to make special studies in the anatomy, physiology, and pathology of the genitourinary organs, because his general knowledge as a physician does not suffice, so the teacher, wishing to teach the science of sex, needs special lessons in this science. His general knowledge of botany and zoology will not suffice.

Finally, the societies have the important duty of teaching physicians the dangers of venereal diseases and of sexual irregularities. It may sound queer, but the writer has met with many physicians who think no more of gonorrhea than of a cold in the head, and who consider a chancre a huge joke. Such physicians, and their number is legion, need a pretty good shaking up by the societies.

To conclude, books fit to be given into the hands of boys and girls are of very little value. By the time a child is able to understand such books it knows more of sex than the book can teach. The societies of sanitary and moral prophylaxis have to concentrate their influence upon the imparting of sex knowledge to parents, teachers, and physicians, who in turn must begin to instruct their wards in the science of sex in early childhood. If early lessons have been neglected, moral preaching will have very little influence upon the boy, and he ought to be instructed by his physician in personal prophylaxis. The girl, before she has made the fatal step, has to be shown the great slavery and misery prostitution brings upon those who embrace it as a profession, and that the career of the prostitute lasts no longer than five to eight years on the average. Then come ruin and the morgue.

12 WEST 123D STREET.

A CASE OF TOTAL DEAFNESS FOLLOWING A DOSE OF QUININE.*

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It is a well recognized fact that drugs such as quinine, salicylic acid, morphine, and alcohol, when administered in one large dose, or when given in small doses for a longer period, occasionally exercise a deleterious influence upon the nerves of special sense. These drugs, owing to their toxic action, may, as I have occasionally observed, give rise to pathological conditions in one or more nerves, which partially or totally impair their function, and not infrequently prove of a temporary or permanent nature.

This applies especially to quinine, whose toxic action occasionally produces destructive changes in the terminal filaments of the auditory nerve, which appears to be particularly susceptible to the influence of this drug. The idiosyncrasy of some individuals to the effect of quinine becomes manifest even after the administration of very small doses, in that they complain of flushing of the face, headache, tinnitus of varying intensity, and more or less impairment in the hearing in one or both ears. In almost every case these manifestations disappear within a short time, leaving no harmful sequelæ. It happens, however, that cases are met with in which the deleterious effect of quinine makes itself apparent in pathological conditions in the labyrinthine portion of one or both ears, with the result that there is a temporary or permanent loss of the hearing function, with or without disturbances in coordination.

A very instructive case in which the harmful action of quinine is fully demonstrated was referred to me by Professor Politzer, of Vienna, about two years ago.

The patient was a young lady, twenty-one years of age, an American by birth. Her family history was negative. There was no evidence of any acquired or congenital aural condition in her parents or other immediate relations. During the earlier years of her life she had the usual ailments of childhood, but never had any affection referable to her ears. She was always a robust individual and enjoyed the best of health. Six years ago she had a severe attack of grippe associated with a marked coryza. A kind neighbor, who meant well and thought he could break up her cold, gave her six five grain quinine pills, making, therefore, a dose of thirty grains. This she took within a period of fifteen minutes, the time being about ten o'clock in the evening. Two hours later she complained of an intense headache and severe tinnitus in both ears. There was no disturbance in coordination, but she noticed a marked diminution in her hearing which steadily grew worse, so that perception for all sounds was completely lost by the following morning. She did not seek medical aid immediately hoping that her lost function would in time reestablish itself. Finding that she remained deaf in both ears, she consulted different aurists with the hope that something could be done for her, and finally Professor Politzer, of Vienna, who, after a careful examination, pronounced her case hopeless.

Upon her return to this country she called upon me, and I found, upon inspection, a normal condition of the external auditory canals and tympanic membranes. There were no evidences of a previous aural trouble, and inspection of her nose and throat revealed nothing abnormal. The tuning fork tests showed an absolute loss of perception for all tones in both ears. Perception by air conduction was nil, and the vibrating fork placed against the mastoid, on either side, or on the vertex of the head, was not perceived as a tone, but interpreted merely as vibrations. In other words, there was a complete absence of perception for sounds by air and bone conduction, indicating, therefore, a bilateral, total nerve deafness. That is, we were dealing with a labyrinthine loss of hearing, in which both ears were involved.

In order to ascertain whether the vestibular portions of her labyrinths were functionating, I performed the usual rotatory tests and Bárány's test of injection of cold water into the external auditory canals. I noticed, after a few moments, that there was a slight nystagmus, which allowed me to assume that the vestibular part of the labyrinth was still irritable, and that the static reaction was preserved. This proved of great interest, as it clearly showed that the destruction, if caused by the toxic action of the quinine, was limited to only the cochlear portion of the labyrinth. There had been, therefore, a degeneration of the terminal filaments of the auditory nerve in the cochlear part, resulting in the complete loss of hearing, while the vestibular part had apparently escaped, inasmuch as there were no disturbances in coordination. The perception for speech was naturally also entirely lost, but through

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practice she acquired such a dexterity in reading the lips that one would hardly believe that she was completely deaf. Examination of the eyes did not show any changes in the fundi. About a year ago she passed through a confinement, bearing a healthy normal child. This in no way influenced her aural condition.

She received all forms of treatment, that is, injections of solutions of pilocarpine, sweat cures, electric currents, and large doses of iodides, besides local treatment of the ears in the form of catheterization, massage, etc. All these proved of no avail, so that treatment was finally abandoned.

A Wassermann test proved negative. In order to exclude the possibility of a long standing hysteria, or some other neurological condition, I had her thoroughly examined by Dr. S. P. Goodhart, the neurologist, who found no manifestations indicative of such a condition. I was therefore convinced that I was not dealing with a functional loss of hearing, but with a true organic lesion. The patient still clings to a vain hope that her lost function may be restored, and is at present receiving injections of strychnine and electric currents applied to the mastoid regions. There seems to be no change in her condition, as one would naturally expect, and I therefore have given up all ideas of restoring her lost hearing, regarding the case as one doomed to permanent deafness.

The principle upon which this form of lost hearing is based was first advanced in 1881 by Kirchner (1), who undertook a series of experiments on cats, dogs, rabbits, etc. He administered to these animals large doses of quinine, which caused paralyses of the extremities and finally death. The ears were then carefully examined, and Kirchner found hyperemia and areas of ecchymoses throughout the mucous membrane of the middle ear and in the structures of the labyrinth. He attributed these changes to a vasomotor paralysis of the bloodvessels brought about by the toxic action of the drug. He also noticed a seromucous and hemorrhagic exudate, which, according to him, produced secondary destructive changes in the nerve endings, with subsequent loss in the hearing. Whether the changes found by Kirchner were due to the action of the drug, as he believed, is questionable, for it must be borne in mind that these animals received doses sufficient to cause death by strangulation, and this may have produced the conditions found post mortem. It has been repeatedly observed by careful investigators that hemorrhages and hyperemia of the bloodvessels have been found in the ears of animals which have been killed by strangulation alone, and not by the action of poisons.

Among these investigators was Grunert, who undertook a series of experiments on animals. He killed pigeons and mice by strangulation, and found hyperemia and hemorrhages in the mucous membrane of the middle ear and in the structures of the labyrinth similar to those observed by Kirchner. Wittmaack (2), in 1903, likewise investigated this subject and performed a series of experiments on animals by administering large and small doses of quinine. He did not agree with the explanation advanced by Kirchner, although he also found similar changes in the middle ear and labyrinth of his animals. Wittmaack did not attribute his findings to the toxic action of the drug, but was rather inclined to believe that the changes observed by him were due to strangulation and the forced respiratory acts caused by the large doses of the drug. He noticed, on the other hand, that in those animals in which the doses were small, and in which the poisonous effects were mild, these changes were entirely lacking. This would indicate that the conditions found by Wittmaack were not due to the direct or rather specific action of the quinine, but would make one believe that they were secondary.

Wittmaack was also inclined to believe that there is an ischemia of the membranous labyrinth, similar to an ischemia of the retina, brought about by some circulatory disturbance due to the specific action of quinine. This, however, was not based on facts, as it had not been proved clinically or experimentally. Upon further investigation he changed his views. In another group of experiments on animals he found, upon more careful examinations, changes in the cells of the spiral and vestibular ganglions. That such changes take place in these ganglionic cells seems to coincide with the fact that the toxic action of quinine acts upon cells in general. It is, according to Wittmaack, a protoplasmic poison, and he therefore did not consider it surprising that it should attack the very sensitive nerve cells of one of our most sensitive organs. As the changes observed in the auditory apparatus take place so shortly after the administration of the drug, he no longer regarded them as secondary, due to circulatory disturbances, as he at first thought, but rather attributed them to a primary specific action of the poison upon the nerve cells. The primary effect of the toxic action of quinine makes itself manifest, as a rule, in the form of more or less tinnitus. This, no doubt, is brought about by an irritation of the cells of the spiral ganglion. If, on the other hand, one observes an accompanying vertigo varying in intensity, it may be assumed that there is a simultaneous involvement of the cells in the vestibular ganglion. Witmaack therefore concluded that it was the specific action of the quinine and the circulatory disturbances, acting jointly upon the ganglion cells of the auditory nerve in the labyrinth, that most likely produced the loss of hearing in cases of quinine intoxication.

Roosa (3), who is supposed to have observed changes in the ears following the use of quinine, administered from ten to fifteen grains of the drug to several students. In from one to one and a half hours later he asserted to have noticed a redness of the face and auricles and a marked injection of the vessels along the handle of the malleus. He further learned that his subjects had severe ringing noises in both ears. These conditions following so shortly after the absorption of the drug in perfectly normal individuals warranted Roosa in assuming, with justice, that these changes were caused by the toxic and specific action of the quinine. Similar objective changes, however, have not been observed by other investigators.

From the foregoing, therefore, it becomes evident that we cannot regard the changes found in animals as the true cause of this form of deafness in man, and must as yet look upon this matter as an unsettled question. This is readily understood when we stop to consider that the pathological changes which give rise to this form of deafness have not as yet been clearly established, for the reason that our knowledge is based entirely upon

animal experiments, and we have no record of any case in which a pathological anatomical or microscopical examination has been made of the ears of an individual who has become deaf from the toxic action of quinine. If the conditions found in animals, after the administration of doses of quinine, cannot perhaps be attributed entirely to the effect of the drug, it nevertheless seems as though it had empirically a selective or specific action on the auditory nerve. For, how are we to explain the aural symptoms and the sudden total loss of hearing in both ears in the case given above? We have here a perfectly healthy individual who completely lost her perception for all tones after taking thirty grains of the drug. She had a perfectly functioning organ of hearing prior to this, and received no other medication at the time.

That the auditory nerve is particularly sensitive to the action of quinine, as already stated, is well known, for one often meets with individuals who complain of tinnitus and a slight impairment in hearing, even after the administration of only a few grains. It would seem, therefore, that in spite of the fact that we have no fixed data except those observed in animals to explain the phenomena, we may nevertheless regard our clinical observations as pointing to a selective or specific action of the drug on the structures in the labyrinth, and must also bear in mind that a personal idiosyncrasy plays an important part. Hence, it behooves us, in prescribing this drug, to exercise precaution, for what may seem a small or medium dose for one individual may prove harmful to another. It is extremely fortunate and also surprising that one does not meet more frequently with cases of deafness following the use of quinine, when one stops to consider the carelessness with which it is used and the quantities consumed by the laity.

Cases of quinine deafness are brought to the attention of the profession from time to time, and mention of such instances are made by Dabney (4), Tiffany (5), Shilling (6), Perron (7), and others. In all these the loss of hearing remained permanent and treatment also proved futile, as in my case.

I was prompted to report this case as I believe it is extremely interesting in that both auditory nerves became simultaneously affected, giving us a total bilateral, permanent loss of hearing. It is furthermore of interest in that the destructive changes, which apparently were due to the toxic action of the quinine, produced irreparable lesions in the cochlear portions of both labyrinths only, while the vestibular parts were evidently not involved. We can surmise this from the fact that the loss of hearing was unassociated with any disturbance of coordination. Although the cases in which the action of quinine exercises a deleterious effect upon the auditory nerve are very rare, and one does not often meet with individuals in whom this drug leaves any unpleasant sequelæ, yet an unfortunate case like this ought to be a warning against its indiscriminate use.

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53 EAST FIFTY-EIGHTH STREET.

GASTROPTOSIS AND COLOPTOSIS TRANSVERSA AS SEEN FROM POST MORTEM EXAMINATIONS.

From the Pathological Department of the University of Pennsylvania.

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The term gastroptosis signifies falling of the stomach and is so used in this paper, not considering as true ptosis dilatation or displacement due to pressure, and not including prolapse of the various other organs unless so designated by a special term. Since Glenard produced his work on visceroptosis, in which he attempted in particular to establish gastroptosis as the anatomical basis for neurasthenia, many writers have taken up the subject in its various phases. These contributions are largely from the clinical side of the question and statistics are made up largely from clinical diagnosis.

As to etiological factors, there are those who believe in the persistence of the fetal position of the organ, those who look upon it as a reversion to a previous type, those who consider it the result of a congenitally weak constitution with lack of tone, those who name various conditions increasing intrathoracic pressure, Keith with his theory of a vitiated method of respiration where the poise between the thoracic and abdominal muscles is disturbed, and those who describe more or less specific types as resulting from the removal of some extra intraabdominal pressure, as, for example, Landau's post partum gastroptosis, or from the constriction of the waist by the corset.

Statistics on the subject vary with different writers from three to thirty-five, or even a higher percentage, of all persons, with usually the condition about twice as frequent in the female as the male. The main reasons for these differences in statistics will be seen from the fact that the highest figures come from the clinician and the lowest from the pathologist. Naturally with the patient living and with recourse to different postures, many more minor degrees of change in position of the organ may be made out than with the dead subject on the autopsy table. Then, it is possible that dilatation of the stomach with naturally a lowering of the greater curvature may be mistaken for prolapse clinically, since the upper border, on account of its position, is more or less inaccessible to external examination. It is also questionable if minor degrees of variation in the position of a loosely attached organ should be in itself considered pathological.

The apparent disparity in statistics and the desire to find out just what sequence of affairs in gastroptosis can be fairly and reasonably determined by actual pathological conditions has lead to this study of a series of 2,300 autopsies performed in the

Pathological Department of the University of Pennsylvania.

In this series the condition occurred in seventy-five subjects, or 3.3 per cent. (thirty-two males and forty-three females), unassociated with ptosis of any other organ in nine cases, with prolapse of the transverse colon and small intestine thirty-seven times, with that of the liver and intestines twenty times, and with a general visceroptosis in nine cases.

The degree varied, usually in direct proportion to the emaciation of the subject, from very slight to a condition where the lesser curvature lay below the umbilicus. As to position, some showed a fairly uniform falling, some a sagging of the body especially giving rise to a V shape or kink toward the pylorus, while in some the organ was more or less vertical with the pylorus down and to the left. Dilatation was prominent where there was a sagging of the body and exceptional in the other types. Changes in the wall, usually atrophic, while present in some cases, were not the rule.

In age the subjects varied from twelve to eighty years, the majority past forty, and only a few under twenty.

The diseases which presumably caused the death of the subjects were in thirty cases chronic tuberculosis, in twenty-one chronic nephritis with arteriosclerosis, in three arteriosclerosis with aneurysms, in five arteriosclerosis with hemiplegia, in seven malignant tumors, in four chronic valvular lesions of the heart; and in the remaining five chronic gastric ulcer, diabetes mellitus, syringomyelia, general paresis, and progressive pernicious anemia.

In all of the subjects except five, three of whom were very fat and two in a state of good nutrition, emaciation was well marked and many times extreme, with wasting and softening of the muscular system and thinning and stretching of the supporting ligaments of the stomach. This condition is undoubtedly the underlying cause of gastroptosis, operating largely by relaxing the abdominal wall and so removing support from below, but aided materially by the weakening of the gastrohepatic ligament. I have seen this ligament support as much as sixteen pounds before tearing.

Since these diseases commonly produce emaciation and atrophy without gastroptosis, and since in many of the cases where there was marked emaciation the stomach exhibited nothing abnormal but the prolapse, I see no particular reason for laying the primary wasting at the door of the gastroptosis. In those cases exhibiting dilatation and atrophic changes in the wall of the viscus there were, no doubt, digestive disturbances which would lead to exaggeration of the emaciation and the establishment of a vicious cycle.

The clearness of these points tends to lead one to forget those cases of apparent primary gastroptosis in which the symptoms disappear and the patient regains physical condition when the stomach is supported, and of which there may be coincident cases in this series. Undoubtedly in these cases the existing emaciation is produced by the gastroptosis, but I believe the prolapse here to be the sequel of some previous condition in which the changes in the supporting structures were produced. Those cases of gastroptosis without symptoms I would place in this same class, and here the function of the organ has not been disturbed.

Since the majority of cases have been in the middle aged and the senile and rarely in the young, and since the position of the organ in prolapse rarely conforms to anything near the fetal position, it would seem that the theory of persistence of fetal position is not important. Such a cause should have produced cases outside the line of wasting diseases. That the viscus should regain something of its fetal position in prolapse is but natural.

With reference to the longwaisted individual, in whom some consider the condition very common, no doubt the large abdominal cavity will favor the occurrence upon establishment of a cause.

Since the condition was found more frequently in the female than the male it seems that the lax abdominal wall (which is similar in its lack of action to the atrophic wall) produced by pregnancies and removal of large tumors from the cavity, etc., as well as the waist constricting corset, are at least predisposing factors and possibly actual causes in extreme cases.

Increased intrathoracic pressure in itself produces displacement rather than prolapse, and there are probably many such displacements which leave the organ fixed in an abnormal position and upon removal of the pressure produce what is apparently a primary gastroptosis.

In this same series it was interesting to note the occurrence of prolapse of the transverse colon. This condition was present in 120 subjects, 5.2 per cent., of whom fifty-three were males and sixty-seven females. It was unassociated with prolapse of any other organ forty-eight times, with gastroptosis thirty-seven times, with prolapse of stomach, intestines, and liver twenty times, with that of the liver alone six times, and was a part of a general visceroptosis nine times. The diseases in which the condition occurred were practically the same and in about the same proportions as given in gastroptosis. The degree, as in gastroptosis, was usually in direct proportion to the degree of emaciation, and varied from a minor affair to a looped or V shaped prolapse into the pelvis. In a few of the cases the hepatic flexure was prolapsed, as described by Virchow, as the first viscus to fall in visceroptosis, but this did not seem prominent enough to warrant that conclusion. In many of the cases the organ was distended with fecal matter and commonly exhibited pouchlike dilatations and accumulations of scybalous masses as evidence of constipation, and no doubt leading into a vicious cycle from the weight of these masses. This organ being more liable to prolapse than the stomach, because of the weakness of the suspensory ligament and the fact that it lies in no supporting bed and contains weighty contents, especially in constipation, the condition was much more frequent than gastroptosis. That it is practically always present when prolapse of the stomach occurs is natural because of these predisposing features and the added pressure from the stomach, but in a few cases it held its position, and the stomach came down over it.

These features of prolapse of the transverse colon, while important in themselves, undoubtedly

make the position outlined above for gastroptosis much stronger.

CONCLUSIONS.

In the light of the findings in these cases it seems safe to conclude:

1. That gastroptosis and coloptosis are secondary conditions and not primary.

2. That the underlying cause in both conditions is a weakening and relaxation of their supporting structures consequent to some wasting disease, supplemented materially in the case of the colon, and to a less extent in that of the stomach, by an actual myasthenia of their walls allowing an accumulation of their contents.

3. That the emaciation is primarily the cause of the conditions, but the establishment of a vicious cycle is likely if the prolapse interferes with the digestive function.

4. That the high percentage of occurrences of these conditions frequently seen in literature is not borne out by post mortem examination.

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Therapeutic Notes.

Various Uses of Sulphur in Skin Affections.—A. W. Brayton, in the *Indianapolis Medical Journal* for February, 1913, points out that in acne vulgaris or rosacea precipitated sulphur, mixed in the ratio of one to four with any ordinary face powder the patient wishes to use, forms a useful dry application. At night the following lotion may be applied:

℞ Zinci sulphatis, } .....āā ʒii (8 grammes);
Potassii sulphidi, }
Aquæ rosæ, ...℥xii (350 grammes)
Fiat lotio secundum artem.
Sig.: Shake well before applying.

Precipitated sulphur may also be used in ointment of rose, in the ratio of one drachm to one ounce (from four to thirty-two grammes). Sulphur treatment may be continued as long as desired. By scraping off blackheads after washing with soap and hot water, by opening pustules freely with a sharp knife, and by vigorous rubbing with a brush or coarse towel at night before applying the lotion, ordinary acne may be kept under control or even cured.

In the treatment of dandruff and seborrheic dermatitis of the scalp, the latter should be cleansed once a week with tar soap, the lather washed out with water, and when the scalp is dry, a portion the size of the end of the thumb of the following cream well rubbed into the scalp with the finger tips:

℞ Sulphuris præcipitati, ...ʒi (4 grammes);
Acidi salicylici, ...ʒss (2 grammes);
Unguenti aquæ rosæ, ...ʒi (30 grammes).
M. ft. unguentum.

This ointment may also be used for seborrheic dermatitis of the face or of the entire body. White precipitate ointment might be used instead for the limbs and trunk.

The following preparation is very efficient as a keratolytic and destroyer of dandruff:

℞ Hydrargyri chloridi corrosivi, gr. vi (0.4 gramme);
Acidi salicylici, ...ʒss (2 grammes);
Aquæ rosæ, ...℥ii (60 grammes);
Alcoholis, ...℥vi (150 grammes).
M. ft. lotio.

To each eight ounces of this combination there may be added from one half to one drachm (from two to four grammes) of castor oil or of glycerine. Resorcinol in one to three per cent. strength may also be substituted for the corrosive sublimate. Half an ounce of the preparation should be rubbed into the scalp with the fingers every morning.

In scabies sulphur powder is an effective remedy. The parts should first be washed with sand soap, a brush being used to break up the burrows of the itch mite, a small teaspoonful of the washed flowers of sulphur or of precipitated sulphur dusted over the entire body and then rubbed in. In the case of a child a half teaspoonful of sulphur may be sprinkled in the nightgown or between the sheets at bedtime every other night, and the underwear changed two or three times a week only. By this method no ointment is necessary, and sulphur dermatitis is avoided. One may, however, rub between the fingers, on the elbows and knees, and about the genitals a little of the sulphur cream.

In ringworm of the crotch and armpits a mixture of sulphur with talcum powder constitutes also a promptly effective and cleanly measure.

Treatment of Pulmonary Tuberculosis.—L. G. Pedigo, in the *Therapeutic Gazette* for March, 1913, reports good results from the use of an ointment of oil of eucalyptus. The formula generally used is as follows:

℞ Olei olivæ, ...℥ii (60 grammes);
Adipis benzoinati, ...℥vi (180 grammes);
Olei theobromatis, } .....āā ʒiv (120 grammes).
Olei eucalypti, ... }
M. ft. unguentum.

In the summertime a twenty-five per cent. solution of the oil of eucalyptus in cocoanut oil is used instead. One teaspoonful of either preparation is thoroughly rubbed into the skin until it disappears, the site being changed at each application. The greater part of the fifteen minims of eucalyptus oil thus employed reaches the circulation. Proof of its prompt diffusion through the system is afforded in that the sputum has its characteristic odor on the day after the first inunction has been given.

The sputum, from yellow and viscid, becomes frothy, white, loose, and temporarily more abundant. Later it is reduced in amount, and there is also generally a continued improvement in the cough. The temperature invariably runs a lower and more favorable course; this change usually begins within twenty-four hours. The patient, as a rule, experiences a feeling of well being. The author is inclined to attribute the gross changes in the sputum at least partly to a favorable modification of the bacterial flora of the lungs. Even in far advanced cases similar effects were obtained, the patient being rendered more comfortable and life apparently somewhat prolonged.

Incidentally the author found that good results were produced by the measure in ordinary "colds." The inunctions always proved beneficial and aborted some incipient attacks.

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NEW YORK, SATURDAY, MAY 24, 1913.

A NEW COCAINE LAW FOR THE STATE OF NEW YORK.

The Walker bill, regulating the purchase, sale and disposition of cocaine, eucaine, their salts and preparations thereof, has become a law in the State of New York, taking effect immediately. This law was severely criticised by many New York physicians and has been amended in several respects as the result of this criticism, but the essential features of the original measure are retained. Under the law the physician is required to keep a record of all cocaine and eucaine purchased by him and to record the gross amount disposed of at least once in six months. Where physicians dispense these drugs they are required to furnish a dated certificate to the patient stating the amount of the drug furnished. The possession of these drugs by unlicensed persons without such certificate constitutes a misdemeanor. The druggist dispensing a prescription for such drugs is required to furnish the patient a similar certificate. Before dispensing preparations containing more than one grain in a fluid ounce, or two grains in an ounce of ointment, the pharmacist is required to verify the prescription by consulting the prescriber. Other details of the measure are given in our news columns and should be carefully studied by physicians practising in New York.

It is most unfortunate that the misuse of these drugs has made it necessary in the opinion of the legislature to impose upon physicians the task of keeping such records. The measure is, however, much less objectionable than the absurd Boylan-Kerrigan bill, and in effect will, we believe, not prove burdensome. The medical profession as a whole occupies so high an ethical plane, and does so much for the public welfare without direct compensation, that its members are prone to resent even the slightest legal restriction of their actions. Unfortunately, however, the court records show that there have been a few, happily a very few, men licensed as physicians who, abusing the privileges bestowed by this license, have purchased and sold cocaine for illegitimate purposes. For the sins of these few the many conscientious physicians must suffer the inconvenience of keeping records of their dealings in these drugs. Through the protests of the representatives of the medical organizations this burden has been reduced to what appears to be a minimum, and since the measure has become a law there is nothing left for the physician to do except to comply with its requirements. The operation of the law will be watched with interest, for if it does prove helpful in restricting the illegitimate sale of cocaine and eucaine, similar legislation will probably be enacted in other States.

AN ANTIVIVISECTIONIST'S LIBEL ACTION.

For the third time the methods of antivivisecsectionists have been publicly discredited in England. Some ten years ago, in an action for libel against Mr. Stephen Coleridge, secretary of the National Antivivisection Society, Doctor Bayliss obtained $10,000 damages for reckless and calumnious misstatements by the antivivisectionists. This was the celebrated "little brown dog" case, and it was in this case that Miss Lind-af-Hageby came to the fore and that her sensational book, "The Shambles of Science," was discredited. Last year, the Royal Commission on Vivisection, after a most exhaustive inquiry, in which most of the prominent antivivisectionists in England appeared to testify, as a result of the evidence before them, discredited practically all the allegations made by the antivivisectionists. Now in an action for libel against Dr. C. W. Saleeby, the *Pall Mall Gazette*, its editor and printer, Miss Lind-af-Hageby has failed to establish her contention, the defendants pleading justification in the truth of their comment.

The history of the case is as follows: On May 7th, 1912, and again on May 10th of that year, Dr. C. W. Saleeby made some comments on an anti-

vivisection shop in Piccadilly, in the windows of which certain ghastly antivivisection exhibits appeared, in which he stated that Piccadilly was made "impossible for decent people by the unscrupulous mendacity of their [the antivivisectionists'] hirelings." He further referred to the "scurrilous lies" circulated by "the critics of vivisection" about Lord Lister after his death. As the shop in Piccadilly belonged to and was maintained by Miss Lind-af-Hageby, this lady insisted that the passages complained of imputed to her that she was "a deliberate and systematic liar and that her antivivisection propaganda had been carried on by a systematic campaign of falsehood." The defendants pleaded in justification the truth of their allegations. The trial lasted sixteen days. Miss Lind-af-Hageby brought forward certain antivivisectionists, some of them medical practitioners, to show that vivisection was useless and cruel. This testimony the defence rebutted by calling Professors Starling, Bayliss, and Waller, who gave evidence from the physiological side; Professor Cushny—late of Ann Arbor—who testified to its value in pharmacology; Sir Victor Horsley, in surgery; Doctors Eyre, Goodall, Caiger, and James Mackenzie, in medicine; Doctor Bullock, in bacteriology; Dr. Alice Corthorn, in plague; and Dr. J. C. Martin, in pathology. One by one, antivivisectionist statements were shown to be reckless and unfounded. A typical example was the statement under a cartoon in the *Antivivisection Review*, of which the plaintiff is editor, alleging that six and a half million deaths from plague in India had been due to inoculation. It was shown that in the period specified there had been only a million inoculations against plague altogether. It took a special jury only twenty minutes to come to a verdict for the defendants.

Perhaps the most gratifying feature of the case is the almost complete unanimity of the press of Great Britain in applauding the verdict and expressing condemnation of the unscrupulousness of antivivisection methods, which one daily paper characterizes as a "campaign of calumny." With such a clear issue as existed in the charges brought against these methods by Doctor Saleeby, after so exhaustive and patient a trial—"marked throughout," as even Mr. Stephen Coleridge admits, in a letter to the *Pall Mall Gazette* of April 24, "by a fine and proper courtesy on both sides"—with so speedy and emphatic a verdict from a jury of men of higher calibre than the ordinary jury, and with such a universal chorus of approval as the verdict elicited, it may be hoped that more scrupulous control over their assertions will in future be exercised by antivivisectionists, even if we must sorrowfully admit that their imperviousness to reason is hardly likely to allow any change in their convictions. Meantime, Miss Lind-af-Hageby is liable in costs, which, it is estimated, will amount in all to about $25,000.

EPILEPSY AS A FACTOR IN ACCIDENTS.

That carriage, automobile, and railway accidents may occur owing to the fact that drivers, chauffeurs, and locomotive engineers may be epileptics, or at least sufferers from one of the many manifestations of *petit mal*, has repeatedly been emphasized in recent years, mainly through the benevolent efforts of a society whose mission is to secure, for persons so afflicted, employment which will prevent their exposing themselves and others to injuries or death. Dr. Matthew Woods, of Philadelphia, to whose humane initiative the movement is due, relates, in a monograph on the subject, instances which clearly illustrate the need of taking this factor into account. A chauffeur who had none other than nocturnal attacks before, for instance, became the cause of an accident in which death and mutilation occurred; another chauffeur, found in the throes of an epileptic fit, did not know he had been suffering from this málady; a coachman who had caused the destruction of his carriage and very nearly the death of three successive employers and himself, finally was found to have suffered from so called "dizzy spells." A locomotive engineer was also found to suffer from short periods of semiconsciousness during which he lost control of things. That some of the calamities ascribed to neglect of danger signals may have been due to this cause is, at least, within the range of possibility. The epileptic nurse who falls downstairs with a child in her arms and cripples it for life, and the epileptic barber who disfigures his customer, but illustrate the varied occupations in which the epileptic may become a source of grave danger to others. As to the dangers to which epileptics are themselves exposed when working as house painters, machinists, engineers, roofers, etc., the not infrequent deaths credited to this cause in newspapers sufficiently bespeak the need of efforts at prevention. Briefly, "many a child has become a cripple because its nurse was an epileptic; many a home reduced to ashes because an epileptic became unconscious while carrying a light or using a fire; many a bread winner for a dependent family has fallen from a scaffold, ladder, or roof and lost his life because he was an epileptic unsuitably employed; many an automobile accident has occurred and will occur because at the critical moment the chauffeur was taken with an attack; many carriage collisions and other casual-

ties happen from the same cause, for there are many epileptics who merely lose consciousness for a few moments without convulsions, and thus the disease may go undetected until it develops into spasms or until some mutilating or mortal accident brings the victim to the doctor."

That the medical profession could do much to curtail the loss of life and the instances of injury from this cause is self evident. The case history of an epileptic or of a sufferer from *petit mal*, as in the case of other diseases, mentions his occupation, and this affords the physician the opportunity, in case that occupation involves danger to others or to the epileptic himself, of calling his attention to that danger, and of the need—nay, his duty—to change that occupation. Employers of coachmen, chauffeurs, and engineers would also do much to protect themselves, their families, and their friends, if all persons entrusted with such responsible positions were required to submit to a medical examination before being engaged. Indeed, the time has come when such an examination should be necessary to procure a license as chauffeur, in view of a case related by Doctor Woods. In this instance, an engineer whose body presents evidences of many serious injuries received in the course of epileptic seizures, and averaging four seizures a month, persists, notwithstanding admonitions, in driving his own automobile, which sometimes contains many friends. An individual who thus insists on being a menace to his family, his friends, and the community at large should not possess a license.

MEDICAL INSPECTION OF SCHOOL CHILDREN IN NEW YORK CITY.

The improvement of health conditions in this city of late years, as evidenced by the diminishing death rate, has been marked, and perhaps the most gratifying feature of this is the reduction in infant mortality (effected by the efforts of the health department and of various other agencies working with the same end in view), which has attracted so much attention everywhere. Of very great importance, however, has proved the medical inspection of the children in the public schools for the purpose of excluding from attendance those showing any signs of contagious disease and of discovering physical defects impairing, or likely to impair, the health or capability of the pupil. This work, commencing in a very limited way, has gradually increased in usefulness as larger appropriations for it have been granted by the municipal authorities. Last year the amount available for the purpose ($265,000, or thirty-eight cents for each child), although considerably smaller than the sum asked for by the health department in its budget, was larger than in any previous year.

At a meeting of the Section in Neurology and Psychiatry of the New York Academy of Medicine, held last week, which was devoted to the general topic, "The Relation of the Physician to the Welfare of the Public School Child," Dr. S. Josephine Baker, chief of the division of child hygiene of the health department, read a paper in the course of which she gave an interesting account of the school inspection work during the year 1912. Among the other results accomplished, she said, was a very marked reduction in the number of cases of eye and skin affections among the children, and whereas in 1909 the proportion of pupils suffering from defective nasal breathing amounted to eighteen per cent., in 1912 this was only seven per cent. Our ophthalmological confrères frequently complain, and with reason, that at present the examination of the public school children's eyes is inadequate, asserting that such examinations should be made only by expert specialists; and this certainly ought to be the case. The health department, however, has to do the best that it can with the limited means at its disposal. Ideal conditions are not to be expected just yet, and in the meanwhile the school inspection is accomplishing much.

We learn from the reports of the department that during 1912, 288,469 children were physically examined by the medical inspectors, and that of this number, 87,361 were found to be suffering from one or more untreated physical defects interfering with their general health; while, in addition, no less than 119,359 were found to have defective teeth, though otherwise normal. The character of the defects and number of children suffering from each were as follows: Defective vision, 15,075; defective hearing, 888; defective teeth, 123,163; defective nasal breathing, 13,863; hypertrophied tonsils, 19,549; malnutrition, 6,106; cardiac disease, 1,242; pulmonary disease, 299; orthopedic disease, 547; nervous disease, 660. Of the total number of these affected children, 57,062 received treatment as a result of the efforts of the school nurses, who visited the homes of the children and urged their parents to take them to the family physician, or, if unable to pay for treatment, to some public clinic. As has previously been mentioned in the JOURNAL, the health department during the year established six children's clinics in localities in the city where adequate facilities for clinical treatment had been lacking. These are designed exclusively for public school children whose parents are totally unable to pay for medical treatment, and it is stated that they have been crowded to their capacity.

DENGUE.

E. R. Stitt reviews the history and symptomatology of this disease in the *Bulletin of the Johns Hopkins Hospital* for April. He considers the most important points in the differentiation of dengue from yellow fever to be: 1. The normal urine of dengue and the albuminuria of yellow fever; 2, the striking blood picture of leucopenia (3,200 cells as the average in 100 cases) and low percentage of polymorphonuclears (fifty-one per cent.) in dengue, with normal findings in yellow fever; 3, the jaundice appearing almost always the third day in yellow fever and the characteristic eruption in dengue showing itself from the third to the fifth day. As for the slow pulse said to be characteristic of yellow fever, the author was more impressed by the constancy of a slow pulse in dengue than by any other symptom. Glandular enlargements were very rarely noted by him in dengue. He considers the evidence of the transmission of dengue by the mosquito convincing.

LARGE CORPORATIONS AND HYGIENE.

The *Journal of the Telegraph*, which appears as a monthly in its forty-seventh volume, is the official bulletin of the large electric, telephone, and telegraph companies of the United States. These large institutions have, like various others, come to the conclusion that it is for their best interests to see to the health of their employees—a step in the right direction. Similar action was taken by the great steel corporation of which we spoke in our issue of March 29th. To accomplish this aim, the telegraphic journal has therefore created a medical department under the direction of Dr. Alvah H. Doty, under whose guidance articles will appear in this official journal pertaining to the preservation of health and protection against disease. In the articles which have so far appeared there have been treated such subjects as the air, water, and food. Kept by the employees, these short essays will, when the series is completed, form a good reference book covering practically the entire subject of hygiene.

Obituary.

E. L. SHURLY, M. D.,
of Detroit.

Dr. E. L. Shurly died suddenly on May 10th in Harper Hospital, Detroit. Born in Buffalo, sixty-seven years ago, he studied medicine in his native city and, after graduating and having had some experience in hospital work, entered the army as an assistant surgeon. In 1870 he resigned, and then practised for three years in Manistee. Next he removed to Detroit, where he had practised since then. Doctor Shurly was an active worker and was connected with many public institutions. He was one of the founders of the Detroit College of Medicine, in which institution he held the chair of professor of laryngology for many years. He was one of the pioneers in Detroit in the fight against tuberculosis. He was president of the American Laryngological Society and of the Michigan State Medical Society. He was also the author of several medical books.

News Items.

Changes of Address.—Dr. Robert Pettit, to 544 West 157th Street, New York.

Endowment Fund for Medical Research at the University of California.—Announcement is made of a gift of $1,000,000 to the University of California, by Mrs. George William Hooper, of San Francisco, for the establishment of an institute for medical research at the university. The gift was made as a memorial to the husband of the donor.

American Dermatological Association.—At the thirty-seventh annual meeting of this association, held in Washington, D. C., on May 6th, 7th and 8th, the following officers were elected: President, Dr. James M. Winfield, of Brooklyn; vice-president, Dr. S. Pollitzer, of New York; secretary and treasurer, Dr. Oliver S. Ormsby, of Chicago; member of the council, Dr. William A. Pusey, of Chicago. The association will meet next year in Chicago.

Meetings of Philadelphia Medical Societies.—During the coming week meetings of medical societies will be held in Philadelphia as follows: Monday, May 26th, Section in General Medicine, College of Physicians; Tuesday, May 27th, West Philadelphia Medical Association and the St. Mary's Hospital Clinical Society; Wednesday, May 28th, County Medical Society; Friday, May 30th, Medical Club Reception.

New Officers of American Pediatric Society.—The following officers were elected by this society at its annual meeting, held in Washington, D. C., on May 5th, 6th, and 7th: President, Dr. Samuel M. Hamill, of Philadelphia; vice-president, Dr. Matthias Nicoll, of New York; secretary, Dr. Samuel S. Adams, of Washington, D. C.; treasurer, Dr. C. H. Dunn, of Boston; editor and recorder, Dr. Linnæus E. La Fetra, of New York. Next year's meeting will be held in New London, Conn.

American Society of Medical Sociology.—A meeting of this society will be held on the evening of May 24th, at 8:45 o'clock, at 12 Mount Morris Park West. The topic of the evening will be Eugenics and Euthenics, or the Relative Influence of Heredity and Environment on the Individual and the Race. Papers will be read by Mr. William English Walling and Dr. William J. Robinson, and a general discussion will follow. All who are interested are invited to attend.

Medical Society of the County of New York.—This society will hold a stated meeting on Monday evening, May 26th, in Hosack Hall, New York Academy of Medicine. The programme will include the following papers: Summer Plans of the Department of Health in Combatting Diseases of Children, by Ernst J. Lederle, Ph. D., commissioner of health of the city of New York; Modern Classification of Summer Diarrhea in Infancy, by Dr. Henry Koplik; Prophylaxis of Summer Diarrhea, by Dr. Charles Gilmore Kerley; Medicinal Treatment of Summer Diarrhea, by Dr. Walter Lester Carr; Configuration of the Colon of the Infant, by Dr. Henry Dwight Chapin.

Alumni of Bellevue Hospital College Hold Reunion.—The class of '98 of the Bellevue Hospital Medical College held their fifteenth reunion on the evening of May 10th. Dr. Anthony Bassler was toastmaster, and addresses were made by Dr. E. E. Smith, Dr. Reginald Rawls, Dr. G. W. Jean, and Dr. J. Bruder, of New York; Dr. S. R. Blatteis, of Brooklyn; Dr. W. Freile and Dr. C. H. Finke, of Jersey City; Dr. A. C. Sanford, of Newport, R. I.; Dr. W. H. Grinnell, of Danby, Vt.; Dr. W. E. Park, of New Milford, Pa.; Dr. M. A. Wardwell, of Penobscot, Me., and others. The next dinner of the class will be held in the year 1918.

Literature on the Treatment of Fractures.—The American Surgical Association's Committee on the Treatment of Fractures of the Long Bones is desirous of obtaining recent literature on the treatment of fractures. They wish to secure two reprints of all papers dealing with the nonoperative or operative treatment of open or compound fractures which have been published within the last five years, also papers dealing with the medicolegal relations of radiography to the diagnosis and treatment of fractures. If authors of papers on these subjects have no reprints, the committee would be pleased to receive memoranda of the places of publication of such papers. Address all communications to Dr. John B. Roberts, 313 South Seventeenth Street, Philadelphia, who is chairman of the committee.

Certificates of Health to Accompany Marriage Licenses in Orange, N. J.—It is reported that the clergymen of the various denominations in the Oranges, N. J., will in future require that prospective brides and bridegrooms furnish certificates of health along with the marriage license, before the marriage ceremony will be performed. The Ministerial Association of the Oranges has sent a formal request to the Orange Medical Society asking that the society send two physicians to take part in a discussion of the subject at a conference to be held in Orange on June 16th. Dr. William B. Graves, of East Orange, and Dr. Richard D. Freeman, of South Orange, have been appointed to represent the society at this conference.

Resolution on the Death of Doctor Morrow.—The medical board of the City Hospital records with sorrow the death of Dr. Prince A. Morrow. Doctor Morrow was appointed dermatologist to the City Hospital, then called the Charity Hospital, in 1884, and was connected with the dermatological department of that institution up to the time of his passing away, the last few years acting as consulting dermatologist. The medical board wishes to express its appreciation of Doctor Morrow as a fellow member, and its sense of loss in his death, and extends to the immediate members of Doctor Morrow's family its sympathy and sorrow.

William B. Pritchard, M. D., President.
Daniel H. Wiesner, M. D., Secretary.

At a meeting of the medical board of the City Hospital, held on May 1, 1913, it was directed that this resolution be drawn, copies sent to the family of the late Doctor Morrow, to the *Medical Record*, and to the *New York Medical Journal*, and that it be spread on the minutes of the meeting.

New Cocaine Law for New York.—The Walker bill, restricting the sale and dispensing of cocaine and eucaine, their salts, and preparations, has passed the New York State Legislature and been signed by the Governor, to take effect immediately. The law requires every registered physician, veterinarian, or dentist, who may have in his possession any of these substances, to make a record of the amount of each in a book to be kept for that purpose, stating the place in which it is kept. If the amount on hand of any of these drugs is more than one and one eighth ounces, a report must be made in writing to the State Department of Health within thirty days, and thereafter it will be unlawful for any physician, dentist, or veterinarian to have in his possession at one time more than one and one eighth ounces of cocaine or eucaine or their salts. Each hospital or dispensary is required to designate some one individual as authorized to purchase and keep in his possession such of these drugs as may be required, the amount not to exceed five ounces at any one time, which drugs shall be used exclusively for such hospital, shall be kept within the hospital, and the authorized purchaser shall keep a record of purchases made, and of the disposition made of these drugs. Physicians, dentists, and veterinarians must make a record of all cocaine, eucaine, and their salts purchased by them and shall at least once every six months record the gross amount of such substances disposed of by them. The pharmacist is not permitted to dispense prescriptions containing an excess of one per cent. of these drugs until he shall have verified the prescription by inquiry of the prescriber. The pharmacist must retain the prescription, may not refill it, or give a copy, except where the content does not exceed one grain to each fluid ounce, or, in the case of ointments, two grains to the ounce. The dispenser must also deliver to the purchaser with the medicine a certificate stating his name and address, the name and address of the prescriber, the date, and the amount sold. The possession of these substances without such certificate, or in excess of the amount named in the certificate, is illegal, and the certificate does not legalize the possession for more than ten days after its issuance, except where the prescriber makes a written statement that the use of the drug is necessary for a longer period, which period must be named. After a personal examination of the patient, a physician may prescribe and dispense such substances himself, but must deliver to the patient a certificate just as is required of the dispensing pharmacist. All the records named herein shall be open for inspection by duly authorized officials, and shall be kept for at least five years. Failure to keep such records constitutes a misdemeanor, and the illegal disposal of the drug, by sale or gift, a felony.

American Gynecological Society.—The thirty-eighth annual meeting of this society was held in Washington, D. C., on Tuesday, Wednesday, and Thursday, May 6th, 7th, and 8th, under the presidency of Dr. Henry C. Coe, of New York. Officers for the ensuing year were elected as follows: President, Dr. J. Whitridge Williams, of Baltimore; vice-presidents, Dr. Thomas J. Watkins, of Chicago, and Dr. Howard C. Taylor, of New York; secretary, Dr. LeRoy Broun, of New York, reelected; treasurer, Dr. J. Wesley Bovée, of Washington, D. C. Next year's meeting will be held in Boston.

Civil Service Examination.—Among the positions for which examinations will be held on June 14th by the New York State Civil Service Commission is that of physician to the New York State Training School for Girls, at Hudson, N. Y. The position is open to women only, who are licensed medical practitioners in the State of New York, who have graduated from a registered medical school and who, since graduation, have had one year's experience on the resident medical staff of a general hospital or in a State hospital or institution, or who have been engaged for three consecutive years in the practice of medicine. A vacancy exists at present in the position of assistant physician, with a salary of $1,000 and maintenance, increasing to $1,200; and in the position of physician at a salary of $1,200 to $1,500 and maintenance. Intending competitors, who must be citizens of the United States and at least twenty-one years of age, must execute application blanks and file them in the office of the commission on or before June 6, 1913.

American Therapeutic Society.—At the fourteenth annual meeting of the American Therapeutic Society, held in Washington, D. C., on Monday and Tuesday, May 5th and 6th, under the presidency of Dr. Noble P. Barnes, the following officers were elected to serve for the ensuing year: President, Dr. Howard Van Rensselaer, of Albany; first vice-president, Dr. Robert T. Morris, of New York; second vice-president, Dr. Francis M. Pottenger, of Los Angeles; third vice-president, Dr. J. Madison Taylor, of Philadelphia; secretary, Dr. Lewis H. Taylor, of Washington, D. C.; treasurer, Dr. A. Ernest Gallant, of New York; council, Dr. Frederic H. Gerrish, of Portland, Me., Dr. John Blake White, of New York, Dr. Thomas E. Satterthwaite, of New York, Dr. Clarence J. Blake, of Boston, Dr. Francis P. Morgan, of Washington, Dr. Edward D. Fisher, of New York, Dr. A. Ernest Gallant, of New York, Dr. J. Madison Taylor, of Philadelphia, Dr. James C. Wilson, of Philadelphia, Dr. Alexander D. Blackader, of Montreal, Dr. Reynold Webb Wilcox, of New York, Dr. Spencer L. Dawes, of Albany, and Dr. Lewis H. Taylor, of Washington.

Personal.—Surgeon L. L. Williams, of the United States Public Health Service, assumed the duties of chief medical officer at Ellis Island on May 15th, relieving Dr. George W. Stoner, who has been assigned the command of the United States Marine Hospital at Stapleton, Staten Island. Doctor Stoner has completed a twelve years' detail at Ellis Island, having been reassigned twice by the surgeon general. Doctor Williams was in charge of the medical work at Ellis Island in 1900 and 1901. He has had a wide experience in immigration and public health work in this country and abroad. He has been in command of a number of marine hospitals and was at one time assistant surgeon general in charge of the marine hospital division.

Dr. Franklin D. Barker has completed ten years of service in the medical department of the University of Nebraska, and has been made a full professor, having charge of the work in medical zoology and parasitology.

Dr. Hans Zinsser, professor of bacteriology in Leland Stanford University, has been appointed professor of bacteriology in Columbia University, filling the vacancy caused by the death of Dr. Philip Hanson Hiss.

Dr. Richard P. Strong, of the department of tropical medicine of Harvard University, accompanied by two assistants, has gone to South America to study verruga, a disease peculiar to the valleys of Peru. On his return from Peru, Doctor Strong intends to go to Brazil to study beriberi.

Dr. Albert A. Mendez, of Brooklyn, has been appointed chief medical officer of the Contagious Disease Hospital on Swinburne Island, and Dr. John R. Hicks, of New Brighton, has been appointed chief medical officer of the Detention Hospital on Hoffman Island.

Pith of Progressive Literature.

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT.

March 6, 1913.

Mucous Membrane Lupus in the Nose.—Walb believes that tuberculosis of the nasal mucous membrane is often the cause of a beginning of skin tuberculosis of the nose, with which at any time it may be complicated. The infection may have been digital, respiratory, or circulatory, and in frequency is in direct proportion to the presence of other foci elsewhere. We have chiefly to deal with tuberculous disease of the cartilaginous portions of the nose, while the bony skeleton is usually spared. The operative removal is done best by the conchotome. The aftertreatment should consist of regular applications of gauze strips that are saturated with mercury bichloride 1:1000. This is very important, since certain persons remain carriers for the rest of their lives.

The Presence of Typhoid Bacilli on the Tonsils of Typhoid Patients.—F. Schütz and L. Schütz state that not even in a single case of persons having typhoid was it possible to obtain the baccilus from smears of the tonsils. In prophylaxis, therefore, the chief attention is still to be given to the urine and feces.

Tuberculous Infection in Children.—Arent de Besche, out of fifty cases of tuberculous children from whom the bacilli were obtained in pure cultures, found the human type in forty-five, the bovine type in three, and bacilli of an undifferentiated type (mixed viruses of the English tuberculosis commission), in two. Accordingly, they infer, tuberculosis in man is in from ninety-two to ninety-six per cent. of the cases due to human infection.

Operative Treatment of the Kidney Inflammations.—P. Hertz thinks that the healing of a renal inflammation cannot be hastened by the operative procedures of decapsulation and nephrotomy because usually both kidneys are involved. However, the above mentioned operations have given good results in renal coli, so called essential hemorrhages, anuria and uremia, following in the wake of acute and chronic nephritis.

Case of Cured (?) Mordus Addisonii.—Teschemacher reports that as the result of a continued adrenalin therapy there resulted a complete disappearance of the bronze discoloration of the skin and marked improvement of the general condition

Good Effects of Salvarsan; Treatment of Pregnant and Nursing Syphilitic Women.—M. Holth found that salvarsan treatment of pregnant women caused the birth at term of children free from all symptoms. In one case the good effect of the milk of a mother treated with salvarsan could be seen upon the child born with all the symptoms of congenital lues.

March 13, 1913.

Hyomandibular Fistula, a New Form of Congenital Fistula.—H. Küttner reports the case of a girl of eight years who had had a moderately discharging fistula since birth under the angle of the jaw, on the anterior border of the right sternocleidomastoideus. When it closed, as was the case at times, pus exuded from the external auditory meatus. The microscopical examination of the extirpated fistulous passage, which also showed cartilage of the hyoid arch, testified to the clinical diagnosis of a lateral congenital fistula of the neck, communicating with the external meatus, due to arrest of hyomandibular development in fetal life.

The Isolated Action of the Active Substances of the Hypophysis Cerebri.—H. Fühner was able to isolate eight different substances from the infundibular portion of the hypophysis, of which four only exerted the well known action upon the uterine musculature. A hypophysin has been prepared by a sterile mixture of these four substances, and thus it has become possible to give with precise dose the active principles of the hypophysis. Furthermore, experiments on cats, rabbits, rats, and guineapigs have shown that hypophysin possesses a specific action upon the uterus and that action upon respiration and blood pressure occurs only with relatively high doses.

Incubation Period in Acute Paralysis of Children (Heine-Medinsche Disease).—C. Schoug says the carrying of this disease from one infected section to a place free from it has made it possible to place the incubation period at from four to, at most, ten days. No evidence is furnished for the assumption that blood sucking insects play a rôle in the transmission.

Phosphorus for Epileptics.—P. Leubuscher reports that the administration of phosphorated oil (0.1:1000) to epileptics gave at times improved results, while some cases showed no marked change. In some of the improved patients the withdrawal of the phosphorus therapy caused a relapse in the symptoms.

Ulcus rotundum ventriculi and Lymphatismus.—E. Stoerck says that pathological anatomical experiences point to the fact that gastric ulcer in young individuals is due to a general lymphatismus. In these there is often found the condition known as *état mamelloné* of the mucous membrane of the stomach, which furnishes the basis for the development for the ulcer. What rôle the defective protective agencies play, namely, vagotonia and hypoplasia of the vascular system, is still an undecided question.

Copper Treatment of External Tuberculosis.—A. Strauss says that the local use of the copper treatment, combined with lecithin salve, generally employed by means of injections and inunctions, has not only an elective caustic action on lupus tissue, but also a specific action on the tubercle bacilli.

Syphilitic Reinfection after Salvarsan; the Bad Effects of Severe Salvarsan Intoxications.—Antoni asserts that true reinfections occurred in seven cases after combined treatment with salvarsan and calomel. The retention of salvarsan in the blood destroys the oxygen carrying property of the latter, and deaths after the use of the drug are the result of a severe kidney lesion. Therefore, every salvarsan injection demands the minutest control of the kidney function.

March 20, 1913.

The Question of Parasyphilis.—S. Schoenborn and W. Cuntz say that the conception of parasyphilis, first brought out by Fournier, is not tenable to-day. This is as true of the heart, liver, and kidney affections, following in the wake of a syphilitic infection, as for tabes and paralysis, although the finding of the spirochæta in such cases must be considered a rarity. When dealing with a regular syphilitc infection the process can be proved from the history, from a Wassermann reaction, positive, from the positive proof of a simultaneous syphilitic lesion in another part of the body.

Adrenal Gland and Fat Metabolism.—M. Landau found that the content of lipoids in the adrenal cortex is of secondary nature; for its increase or decrease it is dependent upon the more or less abundant presence of lipoids in the whole body. The adrenal cortex is therefore not a focus for the production of lipoids, but represents rather a storehouse for it.

Etiology of Rickets and Calcium Metabolism.—W. Dibbelt, in contradistinction to Ribbert and Kassowitz, who assert that rickets is due to a special toxine traceable to bad air, etc., emphasizes the important rôle of a disturbance in the calcium metabolism, which is, of course, more pronounced in the growing skeleton, with its increased demand on calcium consumption. The factors which are capable of producing this disturbance, appear to be of a manifold nature.

Intraperitoneal Oil Application.—Momburg says that, against a somewhat doubtful therapeutic action of oil introduced intraperitoneally for the purpose of combating peritonitis, cases can be cited in which the oil so introduced has actually produced peritonitis, or at least stimulated one already commencing. That this state of affairs can become fatal for patients in a weakened condition is shown by one of the author's cases cited in detail. He therefore warns against the intraperitoneal application of oil and encourages the use of hot air treatment, which is to be commenced three hours after a laparatomy and employed for half an hour three times a day.

March 27, 1913.

Serological Examination in Lepra.—B. Möllers explains that where tuberculin preparations are employed the serum of persons suffering from mixed or tuberculous lepra shows in at least ninety-five per cent. a positive absence of the complement building reaction. The proportion is less in other forms, or at least in the anesthetic form. In cases of cured lepra the reaction is negative.

Gunshot Wounds of the Joints.—L. Schliep reports his experiences in cases from the Servian and Turkish battlefields, particularly with gunshot wounds of the joints, among which there were forty-eight involving the large joints. The general rule guiding surgical cases on the battlefield was found to be the best here also, namely, that conservative therapy is the best. Of the joint wounds, 10.2 per cent. were infected; in these congestion hyperemia proved an excellent means, both prophylactically and curatively, and, together with immobilization, produced good results.

WIENER KLINISCHE WOCHENSCHRIFT.

April 3, 1913.

The Biological Effects of Radium.—L. Arzt and W. Kerl conclude from a large number of experiments that induced radioactivity has a certain, though weak, bactericidal effect. Changes appear to be produced in lecithin by irradiation, as differences are found in the activation of the hemolysis of cobra venom by lecithin that has been irradiated and such as has not. Radium in substance has a bactericidal action of its own, as can be shown in animal experimentation.

April 10, 1913.

Mercury and Salvarsan.—E. Finger reiterates the position he took two years ago that salvarsan, together with mercury, is preeminently suited for the abortive treatment of the primary stage when the Wassermann reaction is negative, and is particularly indicated in the tertiary stage when we wish to obtain a rapid effect, but that in the primary stage when the Wassermann test is positive, as well as in the early secondary stage, it is well to omit the salvarsan. We know that the onset of a hemorrhagic encephalitis is not to be prevented in this manner, but we do not yet know the fate of patients treated with salvarsan who have paralysis, tabes, and aortitis.

The Influence Exerted by Benzol upon Metabolism, and the Use of this Agent in Leucocythemia.—I. Sohn believes he is justified in the conclusion that benzol influences metabolism in the sense of changing the process of oxidation in the organism, as it increases the quantity of neutral sulphur. The only benefit obtained in leucocythemia from the administration of benzol is a reduction in the number of the white blood corpuscles, but even this he believes to be apparent rather than real, and not to correspond to an improvement of the pathological condition. As benzol is productive of unpleasant digestive troubles, as it causes necrotic changes in the liver and kidneys, and as the results of his experiments indicate that it causes a considerable reduction in the process of oxidation and an acidosis of the organism, he protests against its use in large doses for long periods of time in this disease.

April 17, 1913.

Organic Ferments in Thyroid Serum Used in Endemic Goitre.—Julius Bauer says that ferments coming from the tissue of the thyroid gland may be demonstrated in many cases of endemic goitre, not only in persons in whom the thyroid gland is noticeably enlarged, but in others also. Such individuals as a rule present various clinical symptoms referable to a disturbed activity of the gland. The quantity of such ferments corresponds neither to the intensity and number of the thyrotoxic symptoms, nor to the symptoms presented by the thyroid gland itself. He thinks it would be better to call the condition under discussion endemic dysthyrosis, rather than endemic goitre, because the functional disturbance of the thyroid gland produced by the agent may apparently exist without any enlargement of that organ.

April 24, 1913.

Chancre of the Caruncula lacrimalis.—Fanny Jampolsky reports a case in which a midwife was infected by receiving in her eye some of the amniotic fluid of a patient she was confining. A month later she began to suffer severe pain in the eye, from which, a week later, came a considerable purulent secretion, while the lids were red and swollen. When seen, at the end of two months, the caruncle was swollen, hard, ulcerated, and covered with a gray coating. The swelling encroached somewhat on the neighboring tissues and involved the plica semilunaris. The bulbar conjunctiva was edematous, the preauricular gland was as large as a hazelnut and moderately painful. *Spirochætæ pallidæ* were found in the ulcer. Jampolsky was able to find only six other cases of chancre of the caruncle reported.

ZENTRALBLATT FÜR CHIRURGIE.

April 12, 1913.

Osteotomy for Flatfoot with Great Deformity of the Bones.—Perthes proposes first to remove a wedge shaped piece of bone with its base outward from os naviculare, then to chisel through the calcaneous at a certain point and bend the foot over until the cut sides of the naviculare approximate, leaving a gap in the calcaneous, which he fills with the wedge cut from the other bone. He has done this operation on eight patients—on both feet of four of them. The results in all seem to be good, but too little time has yet elapsed to permit of final judgment.

LYON MÉDICAL.

April 6, 1913.

Correction of Deformities of the Nose.—Garel and Gignoux laud the use of the intranasal route in operating for nasal deformities. All external scarring is avoided, and the procedure is both easily carried out and affords ready access to the osteocartilaginous framework of the nose. Under local anesthesia an incision is first made in the vestibule on its alar side and the skin then reflected, exposing the underlying structures. In saddle nose, the result of traumatism, the septum is frequently crushed in and its uppermost deviated portion or crest can conveniently be used, as in one of the authors' cases, as a cartilaginous graft to make up for the lacking bony support of the bridge. Another plan is to use a fenestrated, malleable plate of aluminum, which can be bent in the desired shape. In either case the flaps of the wound can readily be brought together, and prompt healing takes place.

PRESSE MÉDICALE.

April 19, 1913.

Lymphatism and Other Diatheses.—J. Galup would substitute for the term "scrofula," which infallibly suggests a tuberculous condition, that of "lymphatism," which is thus made to designate a special individual susceptibility to infections, pyogenic or tuberculous, and also a peculiar mode of reaction to these infections. The author adduces evidence to show that both lymphatism and arthritism ("exudative diathesis" of the Germans) represent in reality an anaphylactic condition of the organism. Both anaphylaxis and immunity are defensive reactions, but they may have pathological consequences, and these are believed by the author to be the so called "diathesis." The latter, in turn, may promote disease by favoring infections or metabolic disturbances, and a vicious circle is thus formed. The features distinguishing different diatheses arise either through extrinsic factors, such as the nature of the pathogenic agent, the age of the individual, and the tissue resistance, and through intrinsic causes. In "arthritism," the symptoms continue throughout life and seem to involve simple anaphylactic reactions alone; the complications are chiefly metabolic. In "lymphatism," on the other hand, the symptoms are generally limited to the earlier stages of life, and there are associated reactions of immunity and anaphylactic reactions, the latter localized or general; the complications consist especially of secondary infections. Eventually, either the attempt at securing immunity fails and generalized tuberculosis ensues, or the immunity becomes complete and the anaphylactic state alone persists, the patient's condition then becoming one of "arthritism."

April 23, 1913.

Hydrogen Dioxide in Local Anesthesia for Dental Work.—G. Mahé and P. Vanel report the results obtained with an anesthetic mixture consisting of equal parts of five volume hydrogen dioxide solution and one per cent. cocaine or four per cent. novocaine solution. The chief advantage of such mixtures is avoidance of the untoward effects of epinephrin, while the bloodless operative field, and increased anesthetic power of cocaine or novocaine effected by epinephrin are nevertheless retained. The injections should be made superficially and slowly, with a tepid solution, and stopped as soon as the tissues become pale. The solutions referred to are especially indicated for the extraction of teeth in nervous individuals, children, old persons, diabetics and pregnant women.

REVUE DE CHIRURGIE.

April, 1913.

Recent Fractures of the Os calcis.—P. Soubeyran and A. Rives lay stress on the anatomical construction of the calcaneum, more particularly the arrangement of the cancellous trabeculæ, as a determining factor of the situation and extent of fractures of this bone, and propose a new classification of such fractures in accordance with this idea: (a) Atypical fractures, comprising those in which there are multiple lines of fracture, extending indiscriminately in all directions (these including the occasional cases of fracture where force has been directly applied), and the rather rare sagittal fractures; (b) typical fractures of the articular portions of the bone, i. e., its anterior two thirds, comprising fractures by crushing of the thalamus or neck of the bone, transverse fractures of its body, and fractures of the lesser and greater tuberosities; (c) typical fractures of the non-articular portion or posterior third of the bone, comprising fractures of the posterosuperior angle, epiphyseal detachment, transverse fractures behind

the neck, isolated fractures of the plantar tubercles, impactions of the body of the bone into its tuberosity, and avulsions of the tubercle of insertion of the peroneocalcaneal ligament. The treatment is at first the same in nearly all cases: Elevation of the foot in a well padded trough, and the application of heat and light massage. In about ten days a decision will have to be made concerning subsequent treatment. In fractures without displacement and with merely impaction of the bone and sprain, as well as in comminuted fractures with pronounced impaction of the astragalus into the calcaneum, nonoperative treatment is advisable. A plaster cast should be applied, with the foot in the overcorrected position, and walking not allowed for sixty days. Where, on the other hand, there is deformity of the arch of the foot, joint injury or deformity predominates, the insertion of the tendo Achillis is interfered with, or pain continues after the initial period is over, operation is indicated.

Hemorrhage from Rectal Polypi.—Pierre Mocquot describes the results of histological examination of a rectal polypus, and concludes that bleeding from pedunculated polypus occurs from the tumor itself—not from the adjoining mucous membrane, as some have maintained; and that it is often due to intermittent torsion of the pedicle and takes place both interstitially and at the surface of the growth.

Burns of the Stomach Following Ingestion of Acids.—X. Delore and L. Arnaud report three cases of ingestion of mineral acids in which, although the stomach was found more or less extensively cauterized at operation, the esophagus was but slightly or not at all injured. They discuss at length the indications for operative intervention. Early intervention is desirable only where, notwithstanding the undoubted entrance of acid into the stomach, vomiting does not promptly occur and, in addition, neutralizing fluids cannot for some reason be administered or the stomach washed out. Under these conditions, gastrotomy, evacuation, and irrigation are indicated. In other cases operation is not justified unless copious and repeated bloody vomiting later appears, or there is reason to believe perforation imminent. Under these conditions, if there is necrosis of the gastric wall, the sphacelated area should be brought up to the exterior, and gastric rest and alimentation secured by means of a jejunostomy. If the area cannot be exteriorized, resection is necessary. On the other hand, where there is no necrosis, the stomach being hyperemic and bluish, jejunostomy by the Eiselsberg-Witzel technic should be practised. On the whole, the occasion for early intervention is only infrequently presented. Oftener, a secondary operation is necessary because of continued gastric intolerance; but this operation should not be delayed after it is plain that serious injury to the stomach has been produced. Where diffuse cicatricial changes are found present, or are about to become established, jejunostomy is the procedure of choice, though gastroenterostomy may prove sufficient in some instances. Exclusive feeding through the jejunostomy opening will often lead to such improvement in the general and gastric conditions that posterior gastroenterostomy and restoration of oral feeding can later be effected. Where the cicatricial changes are found limited to the pyloric region, the stomach being dilated, gastroenterostomy is alone necessary.

Epigastric Pain in Appendicitis.—Sante Solieri refers to the pain which patients with appendicitis feel at a point between the xiphoid and the umbilicus, and which is referred by them to the stomach. He has noticed in performing appendectomy under spinal analgesia that the patients, while not feeling pain upon incision of the skin and peritoneum, experience the characteristic epigastric pain when the appendix is pulled upon or compressed between the fingers. After the mesoappendix is cut, the pain can no longer be elicited. Sometimes after the pain has been produced nausea and vomiting occur. The author denies the assertion of Lennander that the appendix is insensitive under both normal and abnormal conditions, and concludes that the epigastric appendicular pain is a reflex phenomenon provoked in the domain of the pneumogastric nerve by acute or chronic inflammatory or mechanical irritation of the nerve terminals of the appendix. The gastric dyspepsia of chronic or recurring appendicitis is likewise explained by reflex disturbance of secretory, motor and vasomotor conditions in the stomach through the vagus.

BRITISH MEDICAL JOURNAL.

May 3, 1913.

The Present Evidence for and against the Use of Tuberculin as a Specific Cure.—H. Batty Shaw reviews the evidence for the belief that tuberculin is capable of curing a tuberculous animal, and sums it all up in the statement that there is none but Koch's. He goes further, and shows that even this "evidence" from Koch is invalidated because the animals used (guineapigs) may be spontaneously tuberculous and may spontaneously cure themselves. This fact is admitted by bacteriologists to be true, but it is one which cannot be established until the death and complete dissection of the animal. It is noteworthy that tuberculin is never used to cure infected cattle, for if it were in any way capable of accomplishing this end it would be in very wide use. Shaw contends, further, that we have absolutely no proof of the curative action of tuberculin in man, for our methods of analyzing our results are wrong. He says: "The fact is that as a profession we are wrong in our methods of estimating 'cures' in the only sense a layman wants to hear of them—real 'cures,' complete eradication of the cause. We have too long judged of 'specific' cures without allowing for the *post hoc, propter hoc* fallacy. We cannot afford to do so any longer, because our statements are being revised by skilled mathematicians; our 'impressions' of proof of cure have been put into the scales and they are found wanting." We physicians have failed to establish by our own death certificates, or our own methods of inquiry, any improvement due to sanatoriums, dispensaries, or the use of tuberculin. Pearson has shown that the improvement was due to a natural process of which we have been unmindful. Shaw has met practically all of the points advanced in favor of the use of tuberculin to cure the disease with counter explanations,

and reiterates the statement that the tuberculin cure of human tuberculosis is far from proved.

Prognosis in Pulmonary Tuberculosis.—J. B. H. Holroyd applied the Arneth leucocyte counting method to thirty cases of tuberculosis and obtained results which confirm the original contentions of Arneth to the effect that in unfavorable cases there is an increase in the relative number of cells with one or two nuclei.

The Epiglottic Suture; Its Value in Indirect Laryngoscopy.—Cyril Horsford describes the method of passing a suture through the epiglottis and improved instruments for the operation. Cocainizing of the region is the only preliminary, and the procedure is simple, without any ill effects, while it affords a greatly increased field of vision and is a great aid in many throat operations. Horsford advocates its employment in any case in which the epiglottis in any way hinders a delicate intralaryngeal manipulation.

Cheilotomy; a Function Restoring Operation in Crippling Traumatic Arthritis of the Hip Joint.—W. Sampson Handley and C. Preston Ball describe what they believe to be a new operation. In certain cases of traumatic arthritis of the hip there is an osteoarthritic lip developed around the head of the femur. This limits the motion of the limb. The authors enter the joint and, by the use of appropriate bone cutting instruments, remove the lip of new bone. From the Greek word for lip the authors have derived the name of their operation. In the two cases in which the operation was performed the result was excellent. The authors warn against the use of the operation in cases of osteoarthritis in which a constitutional or toxic element predominates.

Classification of Tumors of the Pituitary Body.—Gerhardt von Bonin offers the following as being easy because it rests upon histogenesis and considers the physiology of the tumors. Epithelial tumors, even when malignant, lead to hyperpituitarism, while those arising from the stroma lead to hypopituitarism.

I. Heterotopic tumors.
   1. Tumors of the craniopharyngeal duct.
   2. Teratomata.
II. Homoiotopic tumors.
   1. Epithelial tumors:
      (a) From anterior lobe { Chromophile, Chromophobe, Combined } { Cubic cell adenoma, Round cell adenoma, Carcinoma }
      (b) From pars intermedia.
   2. Tumors developed from connective tissue:
      (a) From anterior lobe and pars intermedia { Fibroma, Sarcoma }
      (b) From posterior lobe—Glioma.
   3. Mixed tumors—Fibroadenoma.

The tumors classified as heterotopic are those which arise from a tissue not normally present in the pituitary.

LANCET.

May 3, 1913.

Birth Palsy: Subluxation of the Shoulder Joint in Infants and Young Children.—H. A. T. Fairbank calls attention to the fact that in all typical cases of birth palsy, excepting those in which the injury was slight and recovery rapid and those in which the plexus has suffered so severely that the paralysis continues, a tendency, at least, to posterior displacement of the head of the humerus would seem to be invariably present. The displacement is brought about by a combination of factors. The arm hangs vertically at first, and in a position of extreme internal rotation. The injury to the nerve supply of the internal rotators of the arm is either incomplete or is less than to that of the external rotators, so that before the latter begin to recover there is shortening of the internal ones. This being the case, the external rotators can never recover completely. The diminished support at the back of the joint favors backward displacement of the head, and this is aided by a shortening of the anterior portion of the capsule, so that the condition becomes permanent. The treatment of the condition is by reduction, with or without opening into the joint, and retention of the arm in an apparatus for a sufficient time to allow the stretched tissues at the back of the joint to recover and contract, followed by active and passive exercises. A splint for this retention, which gives the ideal results, is made out of tin and is shaped like the letter T. The cross piece, being broad, is intended for application to the chest, while the stem is moulded to support the arm at a right angle to the chest and the forearm in turn at a right angle to the arm. This is used only in the cases reduced without open operation.

Protozoalike Structures in the Blood in a Case of Black Water Fever.—Alfred C. Coles found a small number of granular bodies in the blood late in the course of the disease. These were almost always spherical and had a very definite outline; often a thick capsule seemed to surround them. Their protoplasm stains blue, and spread irregularly through it are from forty to 200 small chromatin staining red granules. The bodies have no nuclei and vary in size from five microns to seventeen by ten microns, with an average size of 11.2 by 10.7 microns. Cole suggests that these bodies may be some form of protozoal parasite, resembling Koch's blue bodies in certain respects and the chlamydozoa of Prowazek in others.

JOURNAL OF TROPICAL MEDICINE AND HYGIENE.

April 1, 1913.

Bronchooidiosis.—Aldo Castellani discusses the various types of bronchitis and bronchoalveolitis, due to fungi, occurring in the tropics. The symptoms are somewhat similar whatever fungus are the cause. In mild cases there is slight bronchitis with mucopurulent expectoration in which the fungi are found, while in severe cases the patient presents all the symptoms of phthisis with hectic fever and hemorrhagic expectoration. The infection may take place from man to man and also probably by the fungi living saprophytically in Nature. The diagnosis is based on the sputum findings. Cultural methods are necessary to identify the fungi. All the species of *Monilia* grow fairly well on gelatin. Mild cases and those of medium gravity respond quickly to potassium iodide, ten to twenty grains, three times daily. When this salt causes severe iodism, saiodine in the same dosage, in cachets, may be given. In the malignant cases the author has seen no improvement from many treatments attempted. The iodide should, however, always be tried in these cases, as well as

balsamics. The diet should be nourishing and tonics given.

April 15, 1913.

Factors Influencing the Health of Europeans in Uganda.—A. R. Cook refers in particular to the disadvantages of the small diurnal range of temperature prevailing in Uganda. The cutaneous arterioles become unresponsive, and cold baths must be abandoned, as no "reaction" follows, chilliness and depression are experienced, and a latent malarial infection may be temporarily roused to activity. Other unpleasant results of the relative evenness of temperature are abnormal nervous sensitiveness to slight stimuli, a tendency to sleeplessness, low blood pressure, tachycardia, and bladder irritability. With regard to malaria, Cook deprecates the use of large doses of quinine. The maximum dose in a day should be thirty, or even twenty grains. This should be continued for a few days, then reduced to ten and five grains. The hydrochloride of quinine gives, on the whole, better results than the sulphate. Occasionally even five grains of quinine produces insomnia, muscular tremors, or indigestion; combination with a bromide may prevent this. In children, euquinine is of great value, even in serious attacks; it can easily be given in jam or butter. To adults it can be given in slightly larger doses. The best method in malarial prophylaxis is to take five grains daily, just as one takes a lump of sugar in a cup of coffee in the morning; this can be continued for months or years without the least harm. The taking of ten grains of quinine twice a week is not at all sufficient in subtertian malaria. No system of prophylaxis can with certainty ward off blackwater fever. In malaria in infants, Cook administers quinine by rectum.

BOSTON MEDICAL AND SURGICAL JOURNAL.

May 8, 1913.

Cholecystitis and Cholelithiasis Associated with Pregnancy.—Robert M. Green says that there seems to be a definite causal association of cholecystitis and cholelithiasis with pregnancy. Symptoms due to either of these conditions may occur during pregnancy, during the puerperium following labor at term, or after miscarriage. The existence of gallbladder disease is not in itself a cause of miscarriage, but a miscarriage may induce the development of active symptoms from a process previously latent. The prognosis of these conditions when they occur during convalescence from miscarriage is the same as when they occur otherwise, and they should receive the same surgical treatment.

The Abuse of the X Rays in the Treatment of Skin Affections.—John T. Bowen asserts that a great many cases of unnecessary disfigurement, more obvious than the original affection, are caused by an improper use of the x rays; that the cases suitable for this treatment can be selected only by those who have some considerable knowledge of skin affections; that this method of treatment requires special study and training, and should not be regarded as an easy and safe procedure by those unskilled in its use.

A Statistical Study of Remissions in General Paralysis.—Harlan L. Paine shows from a study of unselected and consecutive cases of general paralysis admitted to the Danvers State Hospital during a period of thirty-four years that only one case with a history of paralytic seizure showed a remission, and only six cases with a history of any form of cerebral insult showed a remission. Inversely then it may be said that if a case of general paralysis in its early stage has a paralytic seizure, the chances are very small that such a patient will have a remission.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

May 10, 1913.

The Carbohydrate Treatment in Diabetes.—Hermann Strauss explains that this treatment consists in the use of one sort of carbohydrate in nutrition, to the exclusion of the other sorts; aiming at the diminution of the glycosuria and an increased tolerance. The other (noncarbohydrate) articles of diet may be occasionally varied, but, as it is desirable to reduce the quantity of protein, meat is not given and only a small quantity of albumin. At one time it was thought necessary to replace the sugar lost in the urine of diabetic patients, and this gave rise to the milk cure, which occasionally gives very good results, especially when the form of diabetes is neurogenic. The milk method acts well as it is a form of low diet, because with many people the milk sugar is so slowly split that it is only gradually absorbed by the bowels, and because through the Karell method the milk allays both hunger and thirst. The albumin of milk, moreover, is not an irritant. Withal, it is necessary that due regard be taken for each individual case, as the tolerance for milk varies greatly. The rice, the potato, and the oatmeal treatments are outlined and discussed by the writer, and also his recent use of inulin. A certain quantity of carbohydrate agrees with the diabetic patient better the more slowly it is absorbed. In estimating the tolerance of diabetes to inulin notice was taken not only of the glycosuria but also of the acidosis. In grave cases it was found that inulin was better digested than the same quantity of wheat flour, and that in most cases the acidosis was markedly diminished during the inulin period. The various modes of exhibiting inulin are detailed by the writer, who adds that a carbohydrate treatment can only be used periodically, and then only in grave cases of diabetes; the lighter cases being treated both on the old and tried methods. Rational therapy demands that we find not only that preparation of carbohydrates, but also that sort of carbohydrate of which each individual patient can tolerate the greatest amount without secreting a large quantity of sugar. While this complicates the dietetic treatment of diabetics, it also makes for greater success.

Pellagra; Some Facts in Its Epidemiology.—R. M. Grimm, while engaged in the pellagra field work undertaken by the U. S. Public Health Service, observed 323 cases of pellagra with a view to collecting data which would show the character of the home environment of the pellagrins and the

nature of the conditions under which the disease was developing; to make a study of the disease from a hygienic standpoint. From the facts obtained valuable conclusions were drawn. It was found that more cases developed among the whites than among the negroes, the females of both races suffering more than the males, and the larger number of cases developed between the ages of twenty and forty years. Among the married and widowed pellagrins the females predominate; the single pellagrins are sexually equally divided. The months of May and June yielded more cases than other months, and there were more in 1911 than in any previous year. Under conditions of poverty more cases developed than under those of comfort, and more under conditions of comfort than of affluence. More cases developed in the vicinity of other cases than otherwise. It could not be demonstrated that pellagra is hereditary. A possible etiological factor was the food used by the people in whom pellagra is prevalent and developing, and by the writer this is considered the most promising field for the investigation of the etiology of the disease.

MEDICAL RECORD.

May 10, 1913.

The Functions of the Pineal Gland, with Report of Feeding Experiments.—Preliminary researches on the functions of the pineal gland have been made by Charles L. Dane and William N. Berkeley, which seem to prove that this gland is the vestigium of a speial sense organ of vision in invertebrates and certain low vertebrates, while in man it has practically lost all the structural characters of a sense organ and has those of a glandular body undergoing some involution at about the seventh year. The writers believe that in the early period of life it influences bodily nutrition, including the development of the genital organs, the deposit of subcutaneous fat, general growth, and mental progress. Extracts of the pineal gland of bullocks, when injected into the veins of dogs, do not affect the blood pressure. The same extracts when fed to babies cause an increase of metabolic activity, as shown by an increase in nitrogen elimination by the urine. A case of tumor of the pineal gland reported by the writers would seem to show that in adult life entire destruction of the gland does not affect metabolism. Feeding experiments with the use of bullocks' pineals, perfectly fresh and rubbed up with milk sugar till extinguished, have been made by H. H. Goddard and W. S. Cornell in the cases of about fifty children, divided into twenty-four groups. They found that in certain cases of retarded development in children pineal gland was a remedy of value. Their explanation of its action, although entirely hypothetical and on account of the minute amount of it in a normal individual, is that the secretion of the gland acts as a ferment, or catalytic, facilatating the exchange of nutrient material in the brain cells. Where total idiocy and gross physical defect presented, the gland was without effect; in proportion as the patient is less characterized by physical stigmata, the greater benefit is reaped from pineal medication.

The Dissolved Albumin Test for Gastric Cancer.—F. W. Ralph emphasizes the value of this reaction, first brought forward by Ewald and used in his hospital clinic. The function of the stomach is to prepare soluble albumin through the combined action of its hydrochloric acid and pepsin. When one or both of the latter are absent we would naturally expect to find no soluble albumin in the material withdrawn one hour after a simple Ewald test breakfast. This is true in cases of simple achylia, but where we have gastric carcinoma, with absence of free hydrochloric acid, we obtain almost as much soluble albumin as we do in the normal stomach. Three reasons are advanced for this: (*a*) The presence of ferments in the cancer itself, similar to the peptid ferment of Neubauer and Fischer; (*b*) albumin secreted from the growth; and (*c*) the diminished absorption on account of the secondary gastritis. The method of performing the test, as detailed by the writer, is very simple. The test, however, has been criticized because it is quite useless in diagnosticating very early cases of cancer; but, as the writer says, we must differentiate between the ideal and the real diagnosis of the disease, and the test will often be found helpful as an aid in distinguishing between a benign and a malignant achylia.

Exophthalmic Goitre Cured by X Ray.—Sinclair Tousey reports a case of exophthalmic goitre cured by the x ray, no treatment having been required and no return taking place for seven years after treatment and cure. The treatment consisted in applications of the x ray and high frequency currents from a vacuum electrode over the thyroid gland, three times a week, for about three months. The internal treatment was by arsenic and strychnine, but only for a short time. Within a year she was subjected to great anxiety by the illness of her little daughter, but the disease did not return. Yearly examinations have shown that she was each time absolutely normal. The writer's new x ray generator is in effect a dynamo producing a constant direct current of from 10,000 to 110,000 volts, which allows greater speed and safety in radiography and ability to secure simply the penetrating rays for deep seated lesions, instead of the mixture of rays produced by previous induction coils and transformers.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES.

April, 1913.

High Arterial Pressure; High Pressure Hypertrophy of the Heart.—David Riesman points out the fact that high arterial pressure and arteriosclerosis are not synonymous, though often so considered, the latter conveying the idea of an anatomical lesion, a terminal event best studied post mortem, while the former indicates at once a vital functional alteration with a direct bearing upon symptoms. To know whether the blood pressure is high or not requires the knowledge of normal standards. Doctor Woley, in a stud of 1,000 healthy individuals, found the average to be 115 millimetres between the ages of fifteen and thirty years, 127 millimetres between the ages of thirty and forty years, and 130 millimetres between the ages of forty and fifty

years. The writer considers a pressure of over 145 abnormal, and a pressure over 150 pathological, meaning that such a patient should be kept under observation and the cause of the rise in blood pressure ascertained. Bright's disease, particularly the chronic interstitial variety, is closely related to excessive tension of the parenchymatous type. It also raises the blood pressure, and with this excessive tension in nephritis hypertrophy of the heart is a constant feature. Arteriosclerosis is another cause of persisent overtension, the general process being the most active, as local arteriosclerosis may often be intense and yet be unaccompanied by a rise in blood pressure. The cases of most interest and importance are those without notable thickening of the superficial arteries and no renal changes of importance, but with marked overtension. This type is common in men and comprises a rather large proportion of women of middle age who are stout to obese, usually robust, and past fifty years of age, and is not due to syphilis or alcohol. Hypertrophy of the heart is always present, and is not due to valvular disease. The course of these cases depends largely on the state of the heart. As long as compensation exists all is well, but the heart finally yields and decompensation, or angina pectoris, brings about death. High pressure is compensatory and reparative, and any attempt to depress the blood pressure to the normal for the individual is irrational and harmful, but we may reduce it when excessively high to a point where symptoms cease, and keep it there. Rest is first and foremost, especially mental rest, in the treatment. The nitrogenous and purin c ontaining food must be restricted, together with tobacco and alcohol. The iodides and venesection are valuable in this affection. Freedom from care and worry, regular hours, and a frugal diet are the main elements of successful treatment.

The Value of Massage in the Treatment of Various Disorders of Children.—John Phillips calls attention to the value of massage in the treatment of malnutrition, rickets, and various other disorders of children, a method which has been largely neglected, but which yields better results in the majority of instances than in the adult. Patience and skill should be possessed by the operator, who should also have had considerable experience in the nursing care of children. Massage mechanically excites the vessels to action, quickening the circulation and emptying the lymph vessels. The nourishment of the muscle cells is improved by forcing out the waste products and keeping them bathed in a constantly renewed stream of arterial blood. The rate of the heart beat and respiration are slightly increased, and all the bodily functions are stimulated. The acceptibility of this treatment to the children depends largely upon the personality of the masseuse, but after the first treatment the manipulation is apparently a pleasure to the child. The sitting should not be longer than twenty or thirty minutes, given daily during the first two weeks, and then three times a week. The best results are noticed in cases of malnutrition, with anorexia, weak, flabby muscles, and distinct pallor, and is illustrated by a case reported by the writer. Excellent results are obtained also in rickets, where we have flabby muscles, sluggish circulation, and emaciated extremities. Because of this weakened condition the child takes no exercise. Massage replaces the latter effectively. The writer has seen excellent results from massage in many deformities, such as bowing of the legs. The paralyzed muscles of the later stages of acute poliomyelitis and the spastic contractures in cases of polioencephalitis or upper neuron destruction are markedly benefited by massage. In the constipation of children and in nervous children we may expect much from massage. In the latter cases, rest in bed, a carefully supervised diet, and massage cause great improvement. In cardiac lesions and the sequelæ of acute rheumatism, rest in bed is imperative for weeks or months. Massage, with first passive and then resisted movements, is advised after the febrile period.

Some Hematological Findings in Pellagra.—O. S. Hillman has found by experiment that there occasionally exists in pellagra a variable degree of chloranemia, which, however, is not a prominent feature of the attack. Pellagra, apparently, may exist for some time without causing any anemic changes. The writer finds it difficult to determine whether the anemia is due to the actual existence of pellagra or is the result of an indefinite train of conditions antecedent to the inception of the disease. Many patients are perfectly well up to the onset of the attack. In connection with the leucocytes one of the most noteworthy features is the not infrequent presence of a leucocytosis, which appears to be inexplicable in the light of our present knowledge of pellagra, but suggests the possibility of an infectious etiology of obscure origin or some complicating disturbances. The lymphocytosis is of interest, and is probably in line with the general cachectic condition of most pellagrins, who are also often affected with gastrointestinal disorders. The writer's investigations would seem to show that characteristic or constant variations in the large monouclear leucocytes and eosinophiles are lacking.

ARCHIVES OF INTERNAL MEDICINE.

April, 1913.

Method for the Quantitative Determination of Pepsin.—C. H. Neilson and E. Bonnot describe a new method for estimating the pepsin in gastric juice, based on the time required for the clearing of a colloidal suspension of egg albumen when the gastric juice is added to it. The points in favor of the procedure are that the material used is easily obtained, the colloidal albumen solution readily made, the technic simple, the time of making a complete determination under one hour, and the results constant.

Heart Size and Heart Function in Children Showing Orthostatic Albuminuria.—M. H. Bass and H. Wessler, from a study of thirty-six cases with the aid of the orthodiagraph, conclude that in a series of cases of orthostatic albuminuria, selected at random, a considerable number will present evidence of relative cardiovascular insufficiency. Usually there is no cardiac hypertrophy or dilatation. On the contrary, the heart is, in many cases, smaller than normal. Although these hearts do not dilate after exercise, a considerable number of them

fail to become smaller under these conditions. The so called "juvenile heart," or *Wachstumshypertrophie*, occurred three times among the author's cases, while in thirty per cent. of the cases the hearts were of the "drop" (or vertically drawn out and narrow) type, especially in association with other stigmata of constitutional maldevelopment. The conception of pulse or heart instability must be restricted to a tendency of the pulse to become smaller and impalpable after exercise, a condition which the authors found very common in their cases.

Effects of Strychnine and Digitalis on Man.—David Marvin reports experiments made with these drugs on healthy students. Strychnine was given hypodermically in doses of 1/40, 1/30, and 1/20 grain and digitalis by mouth in a dose of the tincture corresponding to about fourteen minims of a tincture of standard strength. The strychnine had no effect on the rate of respiration, except in the dose of 1/20 grain, which produced an average increase of one per minute; this effect varied markedly in the different students, a drop in the rate occasionally occurring without apparent cause. A slowing of the pulse rate resulted from all doses of strychnine, and a marked increase in blood pressure from the 1/30 and 1/20 grain doses. Digitalis had no effect on the respiratory rate, but caused a slowing in the pulse rate of eight beats each minute and a marked increase in blood pressure, which reached its maximum in five hours; the pressure then gradually returning to normal, fifty hours after the exhibition of the single dose.

Study of Respiration and Circulation in Epilepsy.—L. J. Pollock and W. L. Treadway conclude, from a study of forty-four patients, that there are present in many cases of epilepsy rhythmical variations of blood pressure other than those due to respiratory movements. Before a convulsion there occurs a preliminary rise of blood pressure, followed by a sudden drop of blood pressure, and then a period of apnea. The blood pressure was relatively low during convulsions of petit mal type. The pulse was rapid during the convulsions. The findings in some cases suggested that the site of discharge in epilepsy is in the medulla and pons (the "lowest level of fits" of Hughlings Jackson). The study also pointed to the medulla as participating in the discharge in all cases of epilepsy, whether this discharge originates there or not.

Modification of Russo's Urinary Typhoid Fever Test.—Lester Neuman and E. B. Behrend describe a modified test advantageous in that it simplifies the preparation of the reagent, obviates the necessity of using exact quantities, and gives a larger quantity of fluid by which the correct color may be judged. The technic is as follows: Make an aqueous solution of methylene blue of such concentration that, when thoroughly mixed, it will just be translucent. In an ordinary test tube place enough of the solution to rise just above the bowl; then fill the tube with urine, mix thoroughly, examine against good daylight, and note the color reaction. Emerald or mint green indicates a positive reaction, while any tinge of blue renders it negative. In a series of one thousand different cases in which this test was made the only diseases showing a constant, positive reaction were typhoid fever and malaria, though a few positive reactions were obtained in other diseases. The authors conclude that the test is of marked corroborative value in typhoid fever. A negative reaction is very good evidence that the condition is not tphoid fever. Its prognostic value is to be doubted, but its continued appearance in severe cases and reappearance in relapses are important. The differentiation of the true green colorations from the bluish greens is a matter of practice and experience. The very early appearance of the reaction will aid in isolating a suspected patient at once and instituting general prophylactic measures.

BULLETIN OF THE JOHNS HOPKINS HOSPITAL.

April, 1913.

Dangers of the Adenoid Operation.—W. E. Grove discusses in particular the infectious complications, including fever, general sepsis, endocarditis, acute rheumatism, the acute infectious diseases of childhood, tonsillitis, adenitis, torticollis, lung infections, meningitis, and ear infections. He reports two cases of postoperative infection of the nasal accessory sinuses, special features of which were that they both occurred in the second decade of life, i. e., after the sinuses had fully developed; that both occurred in sinuses which drain into the middle meatus; that neither was observed until two or more weeks after operation; and that in one case the operation had been incomplete, a small portion of adenoid tissue at the roof of the pharynx having been allowed to remain. Concluding, Grove advises that removal of adenoids should be done when no local infectious processes are present in the nose, nasopharynx, and ear, and should be avoided during epidemics of the acute diseases of childhood. The patients should be kept under observation after operation longer than has hitherto been the case. The patient's head should be slightly flexed during the operation, as the posterior wall of the nasopharynx then becomes practically a plane surface from which the adenoid tissue can be entirely removed, whereas when the head is extended a pouch is formed above the projecting body of the atlas.

Transplantation of Rib Cartilage into Skin Flap.—J. S. Davis concludes from experimental work and clinical experience that the procedure referred to is a safe and promising one. Cartilage can be used with advantage in otoplasty. In rhinoplasty the cartilage support can be placed in a double faced skin flap from a distant part. It is especially advantageous in saddle nose. The cartilage is properly nourished and does not act as a foreign body. There is practically no absorption and there are no signs of degeneration.

Proceedings of Societies.

THE MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Special Meeting in the Borough of the Bronx, Held February 3, 1913.

Dr. NATHAN B. VAN ETTEN in the Chair.

Chronic Pancreatitis.—Dr. HENRY ROTH reported two cases, one of chronic pancreatitis and the other of acute pancreatitis. The first was that of a male, forty-three years of age, who was admitted to Lebanon Hospital on

June 27, 1911. He stated that he had been well up to seven weeks before that time, when he became jaundiced and was attacked with pains in the upper part of the abdomen, which became localized in the right hypochondriac region. At the same time the stools became clay colored and the urine dark brown. Since the beginning of his illness he had lost thirty pounds. On examination, the skin was found to be yellow, with scratch marks all over the body, and the conjunctiva and sclera were also markedly stained yellow. The pulse was slow and of fair tension, and the temperature was practically normal. The inguinal lymphatic glands were enlarged, but the spleen and kidneys were not palpable. There was no rigidity or tenderness over the abdomen. Hepatic dulness began in the fourth interspace and extended three inches below the costal margin, and the edge of the liver was palpable and found moderately hard and smooth. In the right hypochondrium could be felt a tense and smooth oval mass, which extended from the ribs down to the level of the umbilicus. This was apparently connected with the liver and moving with respiration. The patient was operated upon on July 7th. An exploratory incision was made through the upper part of the right rectus muscle, directly over the mass described; when the gallbladder was found to be very much enlarged and tensely distended with very dark, thick green bile, but no calculi were discovered. There was, however, a hard mass in the head of the pancreas. The gallbladder was drained by means of a dressed rubber tube. Examination of the fluid obtained from the gallbladder revealed the presence of colon bacilli. There was considerable bleeding after the operation, and on July 12th it was deemed advisable to inject fifteen c. c. of horse serum. A second injection, of thirty c. c., was given on the following day. Five days after the operation the temperature rose to 103° F. An abscess developed on the thigh which was opened four weeks later; after which the temperature went down to normal. Jaundice quickly disappeared, and there was a free discharge of bile from the gallbladder, though the stools continued clay colored. The patient went on to gain in weight, and it was decided to close the fistula. A second operation, cholecystoduodenostomy, was performed on October 13th. The abdomen was opened, and, after a dense mass of adhesions had been separated, the gallbladder was isolated. When the pancreas was palpated the same hard nodule was found to be present in its head. On account of the adhesions, it was impossible to raise up the duodenum in order to do a suture anastomosis, and a Murphy button was used instead. Within twenty-four hours after the operation bile appeared in the stools. There was no leakage from the wound, and the patient was discharged on December 1. He continued to gain in weight and strength, but some months later he contracted lobar pneumonia and died.

The history of this case, the speaker said, was characteristic of obstruction of the common duct by something other than a calculus. Progressive jaundice, loss of weight, clay colored stools, and a large, distended gallbladder, with normal temperature, suggested chronic pancreatitis or carcinoma of the pancreas. On operation, the gallbladder and ducts were found to be free from calculi, while in the head of the pancreas, as stated, there was a hard mass. This was of the size of a walnut, and was looked upon as of malignant nature. After the cholecystostomy the jaundice cleared up, though the stools continued to be clay colored. The bleeding following the operation was rather alarming, but it ceased after the horse serum injections. After the patient began to gain weight it seemed reasonable to infer that the condition in the pancreas was due to chronic inflammation, rather than cancer, and he was anxious to have his biliary fistula closed. In view of the fact that he still had obstruction of the common duct, the only procedure feasible was either a cholecystodnodenostomy or a cholecystocolostomy, and the first of these was considered preferable on account of its allowing the bile to enter the small intestine and thus enabling the system to utilize it in a normal manner. Furthermore, in cholecystoduodenostomy there was less danger of infection of the gallbladder from the intestinal contents. Whenever possible, the anastomosis should be made with needle and thread, although a button anastomosis was quite safe, as was shown in this case. Doctor Roth went on to say that the injection of horse serum was resorted to on account of the prostration resulting from the bleeding after the first operation. Although it did no harm in this instance, he had made up his mind never to employ an animal serum again, on account of the danger of anaphylaxis. He referred to a case in which horse serum was used after a similar operation, and although the bleeding was checked, he believed that anaphylaxis was ultimately responsible for the patient's death. Human serum, on the other hand, he said, was just as simple, and absolutely safe, as had been urged by Dr. John Edgar Welch, of New York. It not only tended to check hemorrhage, but also served as one of the best nutrients for the body. In former years he had been accustomed to make use of calcium lactate and calcium chloride, but had never seen any benefit from these agents. As a rule, cases of chronic pancreatitis were due to colangeitis. Some years ago he had operated in a case in which the condition of the pancreas seemed, as in the present instance at the time of the cholecystostomy, to indicate carcinoma of the organ, and the patient was sent home to die. To his surprise, however, recovery took place, and he thought it possible that a very small calculus had become imbedded in the pancreas, which, in consequence of the manipulation incident to the operation, had become dislodged. After that there was nothing to prevent the pancreas from returning to its normal condition.

Acute Pancreatitis.—The second case described was that of a male patient, twenty-five years old, admitted to Har Moriah Hospital on November 1, 1912, who three days previously had been taken ill with severe diffuse colicky pains in the abdomen. On the day following, the pain became localized in the right iliac region, and on the day before admission, according to his statement, he had chills and fever. His bowels had not been moved for three days, but he did not vomit at any time. He also stated that, three months before, he had had an attack similar in character, but of shorter duration. On admission his temperature was 101° F., and pulse 88. The urine was normal, and blood examination showed 18,000 leucocytes and eighty-four per cent. polymorphonuclears. No jaundice or cyanosis was present, and liver dulness was not diminished. There was some distention in the upper part of the abdomen, and marked rigidity in its right upper quadrant and in the epigastric region. Tenderness was most marked on the right side, about the level of the umbilicus, but no masses were palpable in any part of the abdomen. The patient was admitted with a diagnosis of acute appendicitis. This diagnosis was questioned, however, as the physical signs pointed rather to some diseased condition in the upper abdomen, such as an acute infection of the gallbladder or possibly a subacute perforation from gastric ulcer. Laparotomy was done through a right rectus incision, and as soon as the peritoneal cavity was opened a large quantity of bloody fluid escaped. This immediately suggested the presence of an acute pancreatitis. The gallbladder was not distended and did not contain calculi, and there was no ulcer of the stomach or duodenum. There was a free escape of bloody fluid from Morison's pouch and from the foramen of Winslow. The transverse colon was very markedly distended, and its wall thickened and greatly congested. Most of the visible peritoneum was also decidedly hyperemic, and there were many distinct pinhead sized areas of fat necrosis in the upper portion of the omentum. The gastrocolic omentum was bluntly divided, and when the pancreas was exposed it was found to be distinctly enlarged and hard to the touch throughout its entire extent. Cigarette drains were placed along the whole gland and brought out through the lower part of the wound, and a tube drain put into Morison's pouch and near the foramen of Winslow. Before the abdominal cavity was closed, as much of the exudate as possible was removed. Since most of the infection was confined to the upper portion of the abdomen, no other incision was deemed necessary, and the wound was closed down to the drains. After the operation there was a free discharge from the wound for a few days. The temperature fell to normal, and the general condition improved very rapidly. Repeated examination of the urine failed to reveal the presence of sugar or other abnormal constituent, and the patient was discharged cured.

This case, Doctor Roth said, was much milder than those generally met with. Acute pancreatitis, as a rule, was a very grave disease. Frequently it caused rapid collapse, with subnormal temperature and marked cyanosis of the abdomen, as well as of the rest of the body. On

examination there were found tenderness and rigidity all over the abdomen, but most pronounced in its upper portion; where there was also considerable distention. Very often there was some tumefaction in the right iliac fossa, leading to the erroneous diagnosis of appendicitis; and this was due to an accumulation of exudate, which traveled down to this locality. These cases, if allowed to go on, terminated in a general diffuse septic peritonitis. Before operation the diagnosis was very difficult, as the symptoms presented so closely resembled those of acute appendicitis, acute cholecystitis, and perforation by a gastric or duodenal ulcer. Acute pancreatitis, as a rule, was secondary to some condition in the gallbladder or biliary passages. There had been described different varieties of the affection, as hemorrhagic, suppurative, and gangrenous pancreatitis. As a matter of fact, however, these were all merely different stages of the same pathological process. Neither acute nor chronic pancreatitis was of very common occurrence, but we now knew that both were more frequent than was formerly supposed to be the case, and it should be borne in mind that whenever in a case the symptoms and physical signs were more particularly located in the upper abdomen there was a possibility of the presence of pancreatitis.

Dr. Edward Wallace Lee said he had seen many cases of gallbladder disease, but only two in which the condition was associated with pancreatitis. In one of these the diagnosis before he operated was obstruction of the common duct. The patient made a good recovery and had now remained well for five years. In the other case the symptoms were similar. Unfortunately, infection occurred from the opening of an abscess in the pancreas, and death resulted from general peritonitis.

Dr. Samuel Floersheim said that in the last few years much light had been thrown on the subject of pancreatitis. In the diagnosis of chronic pancreatitis two things aided us: The more or less constant presence of glycosuria and the rapid loss of weight. The diagnosis of acute pancreatitis was the most difficult problem we had in medicine. He had known of nine or ten instances in which the diagnosis of this affection had been made where, upon operation, the pancreas was found to be normal. He had also seen the same result in several cases where the diagnosis of chronic pancreatitis had been made.

In reply to a question from Doctor Lee as to the cause of the abscess of the thigh in his case of chronic pancreatitis, Doctor Roth said that this occurred at the site of the injection of horse serum. In reply to a question from Dr. J. Milton Mabbott as to weather there had been an autopsy after the death of this patient from pneumonia, he stated that he was unable to say, as he had not heard of the man's death until a considerable time after its occurrence. He went on to say that he should have laid a little more stress on the presence of bloodstained fluid in the abdomen. When this was found upon opening the abdomen, pancreatitis was the first thing that we should think of, and we should lose no time in getting at the seat of trouble. These were generally desperate cases, and any prolonged manipulation was liable to result fatally. Another valuable sign of pancreatitis, upon opening the abdomen, was the presence of fat necrosis. As to the time for operating in acute pancreatitis, most surgeons were agreed that this should be done as soon as possible, though some were in favor of delaying until the condition had become subacute. There was, however, no means of knowing whether it would become subacute or would progress rapidly to a fatal issue. It seemed to him that this was an acute affection which required immediate attention. As to some of the aids to diagnosis, glycosuria was sometimes found to be only temporary. A great deal had been expected from the Cammidge reaction, but this was probably of little or no value. Besides, it took too long to carry out to be available in a pressing case.

Two cases, with specimens, were reported by Dr. A. E. Munson:

Uterine Fibromyoma.—Mrs. G. S.; had had five children and three abortions. No menstrual disorder up to one year ago. At the age of forty-five years had a severe hemorrhage. Was taken to Union Hospital, where examination revealed a large uterine tumor, freely movable, over which there was a distinct thrill, resembling that of an aneurysm. No hemorrhage at this time, but moderate leucorrhea. No pain. Patient slightly anemic; weight 168 pounds. Hysterectomy was performed, and five large intramuscular fibromyomata were found. Complete recovery.

Submucous Fibroid.—Mrs. A. W.; married; sterile. Menstruation began at the age of fifteen years, but was irregular for the first three years. At twenty years she began to suffer from dysmenorrhea, and at twenty-eight years was confined to bed during menstrual periods, but refused vaginal examination. This condition continued for ten years, by which time the periods lasted over two weeks. At the age of forty-two years she submitted to an examination, when an abdominal tumor, the size of a large grape fruit, was found. The vaginal cervix was closed. Patient anemic, emaciated, and very feeble. Hysterectomy was done, and a large submucous fibroid found. Death resulted in two days.

Uterine Fibromyoma, Atypical Symptoms.—Dr. J. Lewis Amster presented the specimens from this case. The patient was an unmarried woman of forty-three years who applied to him on October 15, 1911, stating that she had been treated for a long time, without benefit, for intestinal indigestion. Menstruation had commenced when she was fifteen years old, and had for the most part been regular. She first sought medical advice in November, 1910, when she complained of nausea and gastric distress, accompanied by palpitation and gaseous eructations. She suffered from constipation, which became more and more pronounced, and at times from attacks of acute indigestion which kept her confined to bed for several days. Inspection of the abdomen revealed a bulging over the bladder region, and by conjoined manipulation, abdominal and rectal (the patient being unwilling to submit to vaginal examination), a very large and hard movable mass could be felt which he had no hesitancy in pronouncing a subperitoneal uterine fibroma. On opening the abdomen (on October 21st) this diagnosis was confirmed. The right ovary was found to be calcareous and the left ovary cystic, while the appendix was firmly bound by adhesions to the right ovary and tube. As the patient was approaching the menopause, he concluded to do a complete hysterectomy, together with the removal of the appendix. At the end of seventy-two hours the patient was out of bed, and in two weeks from the date of the operation was discharged from the hospital. He had seen her on numerous occasions since. Her constipation and indigestion had entirely disappeared, and the outcome of the case was altogether satisfactory. Doctor Amster said that this case showed that all instances of uterine fibroids do not necessarily present all the cardinal symptoms of the textbooks, and that it was of special interest, not only on account of its being atypical so far as the subjective symptoms were concerned, but also because the patient was originally treated for eleven months for some remote ailment, while the underlying source of trouble remained unrecognized. In the attacks to which reference had been made the abdominal pain was general, but especially over the lower right quadrant and pelvic region, and they were no doubt secondary to fecal impaction, which, in turn, was more or less due to pressure from the immense uterine fibroid.

Fibromyoma Uteri—Occurence; Complications: Necessity for Operation.—This paper, by Dr. William P. Healy, was published in the Journal May 3, 1913.

Dr. Howard C. Taylor said that since, as a rule, uterine fibroids appeared in women of over thirty years, it seemed more natural to attribute the cardiac conditions to which reference had been made to arterial changes, rather than to the anemia resulting from the hemorrhages caused by the fibroids. When operation was required it was often desirable to give the patient a period of rest preparatory to this. In a woman with fibroids recently admitted to Roosevelt Hospital for operation the blood pressure was found to be over 200. To operate on her at once would have been to subject her to unnecessary risks. After a few days of rest in bed and suitable diet, however, the pressure had now fallen to 170. While this reduction of pressure had not been as great as could have been desired, the rest had put the patient in much better condition. As far as he was able to see, there was no relation between uterine fibroids and the number of children a woman had borne. Fibroids seemed to affect those who had had several children just as much as those who were sterile. He also doubted very much whether there was any relation between them and pyosalpinx. At the Roosevelt Hospital many negro women were treated, because many of the

race lived in its neighborhood, and among them were a large number of cases of pyosalpinx, as well as of uterine fibroid; but this, he believed, was merely a coincidence. Negresses, it was well known, were peculiarly subject to both these affections, but in other classes of women the two were not so often found in conjunction. As to certain changes supposed to take place in fibroids, particularly sarcoma, this apparently depended largely on the observation of the pathologist making the examination of the tissue. When abroad last summer the speaker had been told at one of the clinics in Berlin that in from eight to ten per cent. of the women with uterine fibroids treated there sarcoma occurred. Dr. Francis Carter Wood had remarked that it was not fair for a pathologist to pronounce judgment on only small pieces of tissue, and the late Doctor Freeborn had once told him that, while he had heard of fibroids changing to sarcoma, he had never seen a case of this kind. The treatment by the x ray had not been spoken of in the paper. This method was now being very largely employed in a number of clinics in Germany, and apparently with very fair success. Fibroid tumors extending as high up as the umbilicus were reported to have become reduced below the symphysis in six or eight weeks under the treatment. It seemed to him that in cases in which it was not advisable to operate it was the best form of treatment we had. It was not, however, entirely without danger. In one patient in whom it did not produce the desired result many adhesions, caused by the action of the x rays, were found when the case finally came to operation. The German gynecologists were not very consistent, for if one case in ten changed to sarcoma, that would be sufficient indication for operative interference.

Doctor Lee said that Doctor Munson had noted in one of his cases a bruit or souffle, which might have been mistaken for that heard in pregnancy. Such a sound, synchronous with the heart's action, he thought, was quite generally met with in the case of large uterine fibroids, and it was sometimes difficult to make a differential diagnosis between these and pregnancy, as they might be attended with nausea, the breast signs, and other characteristics of that condition. It had been his observation that a very large proportion of cases of fibroid (perhaps eighty per cent.) occurred in women who were sterile or who had been pregnant only once or twice; so that instances where the woman had had a considerable number of children were exceptional. To take an illustration from comparative pathology, he had been informed by those who were familiar with the subject that the female mule, a hybrid incapable of becoming pregnant, was peculiarly subject to uterine fibroids. It would seem that the uterus, when debarred from giving vent to its activity in one way, would do so in another. The real operation for fibroids was hysterectomy, for a uterus from which one fibroid had been removed, without the extirpation of the whole organ, would be extremely likely to go on developing other similar tumors. The "fibroid habit" would persist, and it was better therefore to remove the entire uterus. He would like to ask Doctor Healy whether, in doing a hysterectomy, there was a likelihood of injuring the ureters. Personally, he had never met with an accident of this kind, but one man had told him that no one had a right to perform hysterectomy without first catheterizing the ureters.

Dr. J. Milton Mabbott congratulated Doctor Amster on the highly successful result of his case, and also on the fact that he was able to get his patient out of bed in seventy-two hours and discharge her cured in two weeks. It was a great aid in the restoration to health of such a patient to have her out of bed as early as possible.

Dr. Lewis M. Silver said that last year he had had occasion to examine a lady, forty-two years old, who had been married twenty-two years, but had never had any children, and he was puzzled to know whether she was pregnant or not. He called in his brother, Dr. Henry Mann Silver, and afterward Dr. J. Clifton Edgar, and they, too, were in doubt in regard to the case. It was decided to wait for a month, and at the end of that time the conclusion was reached that she was in the fourth month of pregnancy, in addition to having a large uterine fibroid. She was in great pain, and the tumor appeared to be shutting off the circulation. It was therefore removed. The growth was as large as a child's head, and attached to the right cornu. Fortunately, the pregnancy was not disturbed by the operation, and the patient went on to full term; when she was delivered of a living child.

Dr. Ransford E. Van Gieson said he had been wondering why no reference had been made by Doctor Healy or others to the use of ergot. This drug, given either hypodermically or by the mouth, had for many years been considered of service in uterine fibroids.

Doctor Healy, in closing, said he had not gone into the matter of blood pressure because he did not have sufficient data upon which to base any conclusions. While the blood pressure was generally considered to be higher than in other conditions, in the cases in his own series in which there were heart complications the pressure was low for patients with fibromyomata. As to catheterism of the ureters, he had never found it necessary to resort to this procedure. We did not now seem to meet the class of cases in which the ureters were involved, though some fifteen years ago Kelly had laid considerable stress on this matter. Of course, in the case of a broad ligament fibroid ureter, catheterism would be a desirable precaution. In regard to the use of ergot, this agent might be employed for a time, when necessary, like other palliatives, such as tamponing, curetting, etc. The question of when to allow a patient to get up after a laparotomy was an important one. He had known of one instance where, although the patient had been kept strictly in bed, the wound broke wide open at the end of nine days. It was now the practice of many surgeons to employ nonabsorbable sutures, and allow them to remain for ten days. In any case where there was cachexia this plan gave the best results. In animals it had been found that it required ten days to get any kind of union which could be regarded as solid. Up to this time there was practically no firm tissue growth.

Letters to the Editor.

TYPHOID VACCINE.

705 East Genesee Street, Syracuse, N. Y., *May 8, 1913.*

To the Editor:

In view of the discussion which has taken place in the pages of the Journal with reference to typhoid vaccine, the following report of my personal experience may be of interest. In November, 1910, I received a prophylactic injection of 300,000,000 killed bacteria. Within a few hours I began to feel ill. I had headache, ached all over, and felt as if I were coming down with an attack of grippe. The temperature began to rise, and the following day I was confined to bed. The fever each afternoon was higher than the day before, reaching 103° F. by the middle of the week; after which there was a gradual decline, until at the end of the week the temperature was again normal. The spleen was enlarged, as shown by percussion, and there was some question of a slight enlargement of the liver. The urine showed a very high degree of acidity and a great excess of indican. The local reaction about the site of injection over the deltoid muscle was very pronounced. It commenced a few hours after the injection and advanced rapidly. By the end of the third or fourth day the area of inflammatory swelling extended nearly from shoulder to elbow, and involved half the circumference of the arm. A few days later it had entirely disappeared. At the end of the first week a bronchitis developed, accompanied by moderate cough and slight expectoration. In all, I was confined to bed nearly two weeks; after which I took a two weeks trip away from the city, spending most of my time in Atlantic City and Lakewood. The cough immediately improved with change of climate, and upon my return to Syracuse had completely disappeared. By that time, four weeks after having received the vaccine, I felt as well as ever.

I am unable to explain the severe reaction which I experienced. The same preparation of vaccine was used without untoward effects a number of times both before and after I received it. As far as I knew, I was in good health when the vaccine was administered. Apparently the bronchitis was not of a tuberculous nature, as it disappeared very quickly with change of climate and has remained permanently absent. I am, Very truly yours,

Joseph R. Wiseman, M. D.

Book Reviews.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

The Interpretation of Dreams. By Professor Dr. SIGMUND FREUD, LL. D. Authorized Translation of the Third Edition, with Introduction, by A. A. BRILL, Ph. B., M. D., Chief of the Neurological Department of the Bronx Hospital and Dispensary, Clinical Assistant in Neurology and Psychiatry, Columbia University, etc. London: George Allen & Company, Ltd., 1913. Pp. xiii-510.

The authorized translation of the third edition of Freud's book, which has become so widely known, has been very well done with the exception of a few minor mistakes such as unsoured instead of unleavened bread, etc. Doctor Brill has produced a very good book; his foot notes in which he explains some germanisms are well carried out. While we do not want to speak of the original, which was reviewed in these pages before, we only wish to state here that we think that Freud has been carried away by his scientific enthusiasm. Five thousand years ago the orientals founded the pseudoscience of astrology and dream interpretation, trying to lift the veil from the future. During the Christian era the interpretation of dreams lost its importance among the educated, while with the other strata of society it has kept its hold to the present day. It was left to another oriental to start the swing of the pendulum into the opposite direction, that is, to look at the dreams as a revelation of the past. We know we will be attacked for this unorthodox point of view in comparing Freud with the ancient interpreters of dreams, for Freud has found many followers. While there is much truth in explaining the dreams by past impressions, his permanent searching for sexual causes of dreams leads him certainly to false conclusions. The immense amount of labor the originator of this theory has devoted to building up his school could have been much better spent in other directions.

Textbook of Ophthalmology. In the Form of Clinical Lectures. By Dr. PAUL ROEMER, Professor of Ophthalmology at Greifswald. Translated by Dr. MATHIAS LANCKTON FOSTER. With One Hundred and Eighty-six Illustrations in the Text and Thirteen Colored Plates. Volume III. New York: Rebman Company, 1913. Pp. xx-573 to 896. (Price, $2.50.)

This, the third and concluding volume of Roemer's textbook, completes one of the most interesting textbooks on ophthalmic science that has been issued in recent years. The chapters on the pupil, the ocular muscles, and the neurology of the eye are particularly well adapted to the needs of ophthalmic students. One hundred and twenty-four pages are devoted to this phase of ophthalmology and, strangely enough, but ten pages to the whole list of chorioidal diseases. Just why this should be so does not exactly appear, excepting that throughout the three volumes Roemer has dwelt much upon the phases of ophthalmic science that interest him most and has perhaps somewhat slighted some rather important chapters. To diseases of the optic nerve and retina are devoted fifty-four pages of delightfully clear text, which only the more emphasizes the seeming lack of interest in chorioidal conditions. Functional testing of the eyes is fully treated, and these chapters show the influence of Doctor Foster, the translator, in adapting this portion of the book to the needs of American students. As in the preceding volumes, the illustrations are ample and for the most part of a high order of excellence. The three volumes form one of the most suggestive and stimulating textbooks on ophthalmology offered in the last decade. It is no formal statement of the known facts in ophthalmic science—it represents the convictions of an author and investigator who prefers to emphasize certain aspects of our science and to lead the student into new paths of thought. If, as Emerson says, the hardest task any one may set himself is to make men think, then Roemer has more than succeeded, for no one can read these volumes without thinking much. Whether the reader agrees with the author or not signifies little. That he has been made to ponder the deeper facts of our science signifies much. Author, translator, and publisher all deserve praise for this contribution to ophthalmic literature.

Précis pratique d'électricité médicale. Electrologie et instrumentation, rayons x et courants de haute fréquence. Par G. GEIGER, docteur en médecine de la Faculté de Paris. Paris: Jules Rousset, 1913. Pp. 409.

Although much has always been expected of it, electricity as a therapeutic agent is largely discredited by the medical profession, or employed only for its "psychic effect." This is due in a large measure to its general adoption by irregular practitioners, and more especially to the fact that comparatively few physicians have taken the trouble to learn thoroughly the physics of electricity and the physiological and physical effects of all the different modalities when applied to the living organism. With this fact evidently in view, the author has devoted by far the greater part of the volume to the description of apparatus and the explanation of the various electrical modalities. In the latter part of the book about seventy pages are devoted to therapeutics, and here the different diseases and conditions are arranged alphabetically, with an exposition of the particular methods of electrical treatment adapted to each. The entire subject is presented in a concise and precise manner, and the work should serve well as an elementary textbook.

Pathology. A Manual for Teachers and Students. By W. T. COUNCILMAN, M. D., Shattuck Professor of Pathology, Harvard Medical School. Boston: W. M. Leonard, 1912. Pp. 405.

This volume is a presentation of the method of teaching pathology in the Harvard Medical School. The idea is, that opportunity shall be given the student to acquire knowledge of the subject by the exercise of his own powers; consequently comparatively little information is given. It does not seem probable that this book will be very widely purchased as it has what appear to be certain serious drawbacks when considered in the light of general usefulness. To begin with, its avowed purpose is to give the students of a particular school an outline of the work that they are to get. Many other schools may not be inclined to that particular method, or may not have the necessary facilities. Then, too, illustrations have been omitted, on the ground that, as a rule, they represent areas carefully selected for the illustration of a point; the author believing that it is much better that the student should make his own illustrations from the objects studied. The reviewer disagrees with that idea. He holds that a picture of a typical lesion is almost essential in order that the student may have something for comparison. The book, however, is of value to the teacher of pathology in suggesting a course of instruction and in presenting experiments useful in demonstrating various lesions.

Handbook of Diseases of the Ear. For the Use of Students and Practitioners. By RICHARD LAKE, F. R. C. S., Eng., Surgeon, Diseases of the Ear, etc., to the London School of Clinical Medicine, etc. With Four Colored Plates and 77 Original Illustrations. Fourth Edition. Revised and Enlarged. New York: William Wood & Co., 1912. Pp. xiii-287. (Price, $3.)

In the fourth edition of Lake's valuable handbook (the first edition having been published in 1903) the author has increased the amount of matter over the third edition by thirty-one pages, and over the first edition by forty-eight pages. There are eleven new illustrations added to those found in the previous edition, together with four pages of colored plates showing in an excellent manner the various pathological conditions (both acute and chronic) met with in the examination of the tympanic membrane. Chapter three of the previous edition is divided into three parts in the present one, thereby giving two additional chapters, one on the estimation of acuteness of hearing and one on general therapeutics, with the use of instruments The chapter on the internal ear has been rewritten in its entirety to bring it into accord with the latest views on this rapidly developing subject. While the functional tests are of necessity not developed to the extent they are in more complete treatises, they nevertheless give the student and practitioner much valuable information. The same

is likewise true of the descriptions of the operative technic. The plates are clearer than in the former edition and are entirely satisfactory. The list of formulæ for use in various ear conditions is continued in the new edition, together with a valuable index. The book is an improvement over its predecessor, and is of decided merit alike to student and practitioner.

Maladies des Méninges. Par HUTINEL, professeur à la Faculté de Médecine de Paris; KLIPPEL, médecin de l'Hôpital Tenon; H. CLAUDE, professeur agrégé à la Faculté de Médecine de Paris; ROGER VOISIN, ancien chef de clinique à la Faculté de Médecine de Paris, et LÉVY-VALENSI, ancien chef de clinique à la Faculté de Médecine de Paris. Avec 49 figures intercalées le texte XXXV. Nouveau Traité de Médecine et de Thérapeutique, publié en fascicules sous la direction de MM. A. GILBERT et L. THOINOT. Paris: J. B. Baillière et fils, 1912. Pp. 379.

This volume is number thirty-five of the series "Nouveau Traite de Médecine et de Thérapeutique" edited by A. Gilbert and Thoinot, and consists of cyclopedic monographs contributed by the different authors. Thus Hutinel and Voisin present acute meningitis; Klippel, chronic meningitis, pachymeningitis, etc.; and Claude and Lévy-Valensi deal with affections of the spinal meninges. The entire subject is presented in a thorough and systematic manner, and, while the authors have maintained a conservative and judicial position, their work, on the whole, represents well the present day status of the subject. The value of lumbar puncture is emphasized throughout the book, especially from the standpoint of diagnosis, and complete descriptions of the technic are given. One hiatus which occurs, that of a detailed consideration of syphilitic affections of the meninges, is explained by the fact that this subject is presented in volume No. 32 of the same series.

Investigations on Epidemic Infantile Paralysis. Report from the State Medical Institute of Sweden to the Fifteenth International Congress on Hygiene and Demography, Washington, D. C., 1912. Stockholm: Nordiska Bokhandeln. Published by the State Medical Institute Pp. iv-271.

This report is based upon material gathered from the last and largest epidemic of acute poliomyelitis in Sweden which occurred in 1911 and during which about 3,800 cases were observed. The greater part of the work is devoted to experimental and pathological investigations including transmissibility epidemiology, as well as clinical and pathological research concerning the disease in man and its experimental production in monkeys. The English translation is good, and, although nothing new of importance is presented, the report is an able and extensive study of a great epidemic and as such an important contribution to the literature of poliomyelitis.

The Protein Element in Nutrition. By Mayor D. McCAY, M. B., B. Ch., B. A. O., M. R. C. P., I. M. S., Professor of Physiology, Medical College, Calcutta. Illustrated. London: Edward Arnold; New York: Longmans, Green & Co., 1912. Pp. xv-216. (Price, $3.) (International Medical Monographs. General Editors, Leonard Hill, M. B., F. R. S., and William Bulloch, M. D.)

This work is the product of a careful and prolonged investigation to determine the amount of protein required in nutrition. Living and teaching in India, Professor McCay adduces a vast amount of evidence which clearly indicates that the process of growth, to be fruitful in the production of virility and activity, demands a high protein ratio. The author reaches a conclusion which may be said to apply to many other departments of medical science nowadays, viz., that the views held by the older writers on nutrition are sounder and more in accord with the findings of careful scientific study than are those of the newer school. "Voit, who may be taken as a distinguished representative of the former," says the writer, "stands to-day absolutely vindicated; while the earnest plea put forward by Chittenden, for a lowering of the protein and caloric value of dietaries by large amounts, cannot be regarded as longer possible, in the light of the accumulated evidence of the ill effects that follow in the train of chronic underfeeding." The work is a valuable contribution to scientific dietetics. It may be said also to vindicate the teachings of practical experience as against the more elaborate and often misleading and too dogmatically expressed conclusions (unlike our modest Chittenden's) based purely on laboratory researches.

Meetings of Local Medical Societies.

MONDAY, *May 26th.*—Medical Society of the County of New York.

TUESDAY, *May 27th.*—New York Psychoanalytic Society; New York Dermatological Society; Metropolitan Medical Society; New York Medical Union; New York Otological Society. Riverside Practitioners' Society, New York; Valentine Mott Medical Society, New York; Washington Heights Medical Society, New York; Alumni Association of Seney Hospital, Brooklyn; Buffalo Academy of Medicine; Rome, N. Y., Medical Society.

WEDNESDAY, *May 28th.*—New York Academy of Medicine (Section in Laryngology and Rhinology); New York Surgical Society; New York Society of Internal Medicine; Medical Union, Buffalo.

FRIDAY, *May 30th.*—Hospital Graduates' Club, Brooklyn; Audubon Medical Society, New York.

Official News.

United States Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending May 14, 1913:

Austin, H. W., Senior Surgeon. Relieved from duty at Stapleton, N. Y., and directed to proceed to Detroit, Mich., and assume charge of the Marine Hospital at that port. **Carrington,** P. M., Surgeon. Detailed to represent the Service at the annual meeting of the National Association for the Study and Prevention of Tuberculosis, held in Washington, D. C., May 8th and 9th. **Gardner,** C. H., Surgeon. Relieved from duty at Detroit, Mich., and directed to proceed to Buffalo, N. Y., and assume charge of the Marine Hospital at that port. **Gillespie,** J. M., Assistant Surgeon. Relieved from duty in Manila, P. I., and directed to proceed to Hongkong, China, for duty in the office of the American Consul General. **Hasseltine,** H. E., Assistant Surgeon. Directed to proceed to Charlestown, W. Va., for conference with the county health officer relative to an outbreak of smallpox in that vicinity. **Nydegger,** J. A., Surgeon. Detailed to represent the Service at the annual meeting of the American Association for Promoting Hygiene and Public Baths, held in Baltimore on May 13th, 14th, and 15th. **Schereschewsky,** J. W., Surgeon. Designated to serve on the Committee on Rural Nursing of the American Red Cross Society. **Stoner,** G. W., Senior Surgeon. Relieved from duty at Ellis Island, N. Y., and directed to proceed to Stapleton, N. Y., and assume charge of the Marine Hospital at that port. **Williams,** L. L., Surgeon. Relieved from duty at Wilmington, N. C., and directed to take charge of the medical examination of arriving aliens at Ellis Island, N. Y.; order granting leave of absence, without pay, for three months from March 16th, 1913, amended to read "for the period March 16 to May 6, 1913."

Appointments.

The following physicians have been commissioned assistant surgeons in the United States Public Health Service: Francis A. Carmelia, Luther W. Jenkins, Liston Paine, Lionel E. Hooper, Moses V. Safford, and Ernest W. Scott.

Casualty.

Acting Assistant Surgeon E. M. Small died April 20, 1913, at Eastport, Maine.

Boards Convened.

Board of commissioned medical officers which was convened to meet April 7, 1913, at the Bureau, Washington,

D. C., for the examination of applicants for appointments as assistant surgeons, reconvened to meet July 9, 1913, for the same purpose.

Boards of medical officers convened for the physical examination of applicants for appointment as Assistant Surgeons and for the presentation of questions for the written examination to meet June 9, 1913, as follows:

Marine Hospital, Boston, Mass., Senior Surgeon Fairfax Irwin, chairman; Surgeon H. W. Wickes, recorder.

Marine Hospital, Chicago, Ill., Surgeon J. O. Cobb, chairman; Passed Assistant Surgeon Hugh de Valin, recorder.

Marine Hospital, St. Louis, Mo., Surgeon P. M. Carrington, chairman; Acting Assistant Surgeon H. C. Wakefield, recorder.

Marine Hospital, New Orleans, La., Surgeon J. H. White, chairman; Passed Assistant Surgeon A. D. Foster, recorder.

Marine Hospital, San Francisco, Cal., Surgeon R. M. Woodward, chairman; Passed Assistant Surgeon J. R. Hurley, recorder.

Board of medical officers convened to meet at Galveston, Tex., at the call of the chairman, for reexamination of alien Torko Nieman. Detailed for board: Surgeon G. M. Guiteras, chairman; Surgeon L. P. H. Bahrenburg, recorder.

Board of medical officers convened to meet at Boston, Mass., at the call of the chairman, for reexamination of aliens Jamel Haddad and Francisco J. Dias. Detail for board: Surgeon H. W. Wickes, chairman; Assistant Surgeon M. V. Safford, member; Acting Assistant Surgeon A. J. Nute, recorder.

Board of medical officers convened to meet at Fort Trumbull, New London, Conn., upon call of the chairman, for the examination of cadets of the Revenue Cutter Service to determine their physical fitness to be commissioned Third Lieutenants. Detail for the board: Passed Assistant Surgeon H. J. Warner, chairman; Acting Assistant Surgeon J. G. Stanton, recorder.

United States Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending May 17, 1913:

Carr, William B., First Lieutenant. Honorably discharged from the service of the United States, with one year's pay. **Crosby,** W. D., Colonel. Arrived at Fort Sam Houston, Texas, May 9th, for duty as department surgeon of the Southern Department. **Hanner,** J. H., Captain. Leave heretofore granted extended twenty days; authorized to wait at Nagasaki and return to the United States on transport leaving Manila on May 15th. **Kennedy,** James M., Major. Relieved from duty at Fort Shafter, H. T., and will return to San Francisco, Cal., on the transport leaving Manila on June 15th. **Lavanture,** Lewis A., First Lieutenant Medical Reserve Corps. So much of paragraph 11, Special Orders No. 67, March 22, 1913, as gives direction to proceed to Fort Sam Houston, Texas, is revoked, and at end of present leave of absence will proceed to Fort George Wright, Wash., for duty. **Maddux,** Henry C., First Lieutenant. Relieved from present duties and will rejoin his proper station, Fort Moultrie, S. C., on or about June 1st; granted leave of absence for ten days, effective about June 15th, and upon expiration of leave will proceed to San Francisco, as heretofore ordered. **Page,** Henry, Major. Upon completion of course of instruction at the Army Field Service School, Fort Leavenworth, Kansas, will proceed to the Walter Reed General Hospital, Washington, D. C., for duty. **Patterson,** R. U., Major. Granted leave of absence for five days. **Perley,** H. O., Colonel. Having been found disqualified for active duty on account of disability incident to service, is retired. **Sandall,** Laurel B., First Lieutenant, Medical Reserve Corps. Honorably discharged from the service of the United States, his service no longer being required. **Stallman,** George E., Lieutenant. Granted leave of absence for three months, effective about July 1st. **Truby,** W. F., Major, Left San Francisco, May 6th, on one month's leave of absence on surgeon's certificate of disability, with permission to apply for an extension of three months. **Wilson,** James A., Captain. Granted leave of absence for twenty-four days, effective about May 21st. **Woodruff,** Charles E., Lieutenant Colonel. Reports on sick leave of absence at Bayonne, N. J., May 13th, from Nauheim, Germany.

United States Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending May 17, 1913:

Benton, F. L., Surgeon. Detached from the Marine Expeditionary Force and will await orders. **Cottle,** C. F., Passed Assistant Surgeon. Detached from the Naval Hospital, Great Lakes, Ill., and ordered to the Naval Training Station, Great Lakes, Ill. **Davis,** R. G., Assistant Surgeon. Detached from the Naval Proving Grounds, Indian Head, Md., and ordered to the Asiatic Station. **Hough,** F. P. W., Passed Assistant Surgeon. Ordered to the Naval Hospital, Canacao, P. I. **Koltes,** F. X., Passed Assistant Surgeon. Detached from the Naval Training Station, Great Lakes, Ill., and ordered to the *New Jersey*. **Melhorn,** K. C., Passed Assistant Surgeon. Detached from the Naval Hospital, Newport, R. I., and ordered to the *South Dakota*. **Robbins,** I. W., Assistant Surgeon. Detached from the *South Dakota* and ordered home to await orders. **Robertson,** G. E., Assistant Surgeon. Detached from the Marine Expeditionary Force, and ordered home to await orders. **Rose,** M. E., Acting Assistant Surgeon. Ordered to the Navy Yard, Philadelphia. **Sullivan,** N. R., Assistant Surgeon. Ordered to the Naval Hospital, Canacao, P. I. **Zalesky,** W. J., Passed Assistant Surgeon. Ordered to the *Helena*.

Births, Marriages, and Deaths.

Born.

Kennedy.—In Fort Shafter, Honolulu, H. T., on Tuesday, April 22nd, to Major James Madison Kennedy, Medical Corps, United States Army, and Mrs. Kennedy, a son.

Married.

Donnelly—McGarrity.—In New York, on Tuesday, May 6th, Dr. James Francis Donnelly to Miss Mary Irene McGarrity. **Jackson—Ransom.**—In New York, on Monday, May 12th, Dr. Frank W. Jackson and Mrs. Mary E. Lennox Ransom. **Manion—Connors.**—In Newport, N. Y., on Wednesday, May 14th, Dr. Edyard B. Manion, of Ilion, and Miss Margaret Connors. **MacMichael—Anthony.**—In Malden, Mass., on Tuesday, May 13th, Dr. Earle Haggett MacMichael and Miss Grace Miles Anthony. **Vander Veer—de Murias.**—In New York, on Monday, May 12th, Dr. Albert Vander Veer, Jr., and Miss Sylvia A. de Murias.

Died.

Belknap.—In Rochester, N. Y., on Tuesday, May 13th, Dr. Edward B. Belknap, of Wyoming, aged fifty-five years. **Bert.**—In Chicago, on Thursday, May 8th, Dr. Eddy Bert, aged seventy-three years. **Brooks.**—In Newburgh, N. Y., on Tuesday, May 13th, Dr. Edward F. Brooks, aged thirty-eight years. **Cabaniss.**—In New York, on Monday, May 5th, Dr. James E. Cabaniss, aged forty-five years. **Carhart.**—In Brooklyn, on Thursday, May 15th, Dr. Edward William Carhart, aged fifty-six years. **Heffernan.**—In Dubuque, Iowa, on Wednesday, May 7th, Dr. Thomas Henry Heffernan, aged forty-five years. **Henry.**—In Brooklyn, on Saturday, May 17th, Dr. Jesse William Henry, aged eighty-four years. **Kemp.**—In Callicoon, N. Y., on Monday, May 5th, Dr. Simon A. Kemp, aged sixty-six years. **Kyger.**—In Kansas City, Mo., on Monday, May 5th, Dr. John William Kyger, aged sixty-four years. **Meredith.**—In Quakertown, Pa., on Friday, May 9th, Dr. William Henry Meredith, aged sixty-nine years. **Murphy.**—In New York, on Saturday, May 10th, Dr. Richard F. Murphy, aged fifty years. **Rugh.**—In Pittsburgh, Pa., on Saturday, May 10th, Dr. Wilson J. Rugh, aged sixty-five years. **Short.**—In Rolla, Mo., on Monday, May 12th, Dr. John L. Short, aged sixty years. **Shurly.**—In Detroit, on Saturday, May 10th, Dr. E. L. Shurly, aged sixty-seven years. **Stearns.**—In Stony Creek, N. Y., on Wednesday, May 7th, Dr. Phineas L. Stearns, aged eighty-three years.

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Original Communications.

RESTORING MOBILITY AFTER BONY ANKYLOSIS OF THE JOINTS.*

(*Second Paper.*)

BY R. TUNSTALL TAYLOR, M. D.,
Baltimore.

This paper is a continuation of some preliminary work reported before the Clinical Congress of Surgeons of North America at Philadelphia in 1911 (*Surgery, Gynecology, and Obstetrics*, April, 1912, pp. 327-337), which the writer has done in the Kernan Hospital for Crippled Children, St. Agnes's Hospital, and the University Hospital at Baltimore, since June, 1911, and the final conclusions as to its value should be withheld until more time has elapsed. Suffice it to say, that the results so far attained afford ample encouragement to continue the study, modify and improve the technic, and extend the investigation.

Joints made stiff by inflammation and the formation of intraarticular bridges of bone growing between the components or by periarticular collars, locking motion, are so numerous and from such common causes, that one with the opportunity is stimulated to endeavor to find a solution of the problem, which most often by methods hitherto employed by our predecessors have proved valueless or even detrimental or fallen short of the benefit hoped for. Medical literature upon this subject is vast and voluminous and investigations numerous, such writings dating from the beginning of the last century. I will, therefore, simply mention the leaders or originators in the different methods which lead up to our modern conception of the subject.

Naturally, in our research one finds many cases reported in which surgeons have endeavored to give relief for ankylosis of the jaw, which interfered materially with nutrition, or at least deprived the sufferer of the power to masticate solid food, with the attendant absence of stimulation afforded thereby to the digestive function, aside from gustatory pleasures. Those whose lower limbs were ankylosed in flexion or adduction, and those whose upper extremities were stiffened in extension, so that the hand could not reach the face, head, or pocket, most often begged for alleviation.

Louvrier, of Paris, and Langenbeck, of Hanover, have their names associated with originating the procedure known as *briscment forcé* or the forcible breaking up of the adhesions in joints, or, as they termed it, the *redressement* of the joint. This method used by them and their followers, even when often repeated, resulted in the reformation of bony adhesions, leaving the patient sooner or later often in a worse condition than before, except in those mild cases where the stiffness was due solely to a synovial agglutination. Next we find the name of Rhea Barton, of Philadelphia, who, in 1826, sawed through the femoral neck for the relief of this condition, and who was followed by Rogers, in 1830, removing a disc; Sayre, in 1869, of a "roof shaped" piece from the same region; and Berard, in 1838, of a disc from the inferior maxilla, without ultimate success. Many others, including Diffenbach, Esmarch, Schuh, and Rizzoli, tried it and failed.

This procedure was followed by J. M. Carnochan, of New York, in 1840, interposing bits of wood and cotton between the cut ends of bones to prevent readhesion, and these naturally sloughed out, as did the nonabsorbable substances, celluloid, zinc, rubber, silver, cambric, and collodion, and the absorbable magnesium, ivory, and bone chips used by Chlumsky, in 1902.

Verneuil, in 1860, acting upon the hypothesis that often we see nonunion between bone fragments following traumatic fracture from muscular or fascial interposition or misplacement and a pseudoarthrosis resulting, successfully interposed, *with a nutritive pedicle*, muscle and fascia after arthrotomy for an ankylosed jaw. His most enthusiastic followers have been Albert Hoffa, of honored memory, and John B. Murphy, of Chicago, who has written much of late in the *Journal of the American Medical Association* concerning this, and has often had encouraging results.

We next come to Föderl who, in 1903, used as an interposing substance animal membrane, bladder, or the walls of ovarian cysts, heterogeneous materials which frequently caused suppuration, fever, and ultimate extrusion, with sinus formation and reankylosing of the joint. Baer, in 1909, reported similarly the use of chromicized pig's bladder and cargile membrane, with good results.

Finally, we find Thorn recently reporting the use of detached autogenous or homogenous membrane. He dissected out flaps from the fascia lata of the patient to serve as the interposing substance to go in the new formed articulation. Thus, we can

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classify the methods mentioned with my own, which is to be described, into six groups, viz:

1. *Brisement forcé.*
2. Interposition of foreign nonabsorbable substances.
3. Interposition of muscle and fascial flap with nutritive pedicle.
4. Interposition of heterogenous fascia or membrane.
5. Interposition of autogenous or homogenous fascia or membrane without nutritive pedicle.
6. Interposition of absorbable animal substances.

Groups 1 and 2 can be dismissed as obsolete. Groups 3 and 4 I can speak of only from my own experience and that of my orthopedic and surgical colleagues as only partially satisfying, on account of the length of the operation and the pain following, fever, suppuration, sloughing, sinus formation, and the reformation of adhesions in some cases. Groups 5 and 6 are still under advisement and time and numbers of cases will best show us what to expect.

Cases of ankylosis, like cases of other affections, vary much, so that a prognosis for mobility after operation must depend on the joint involved, the degree and nature of the involvement, the causative condition or disease, and changes in adjacent parts. Atrophy, osteoporosis, deformed articular ends, thickening of capsules, shortening of ligaments, tendons muscles, etc., influence materially the results in a given case.

It is needless to say acute cases or active chronic cases should not be touched or even considered for stereoarthrolysis. In June, 1911, the writer began laboratory and animal experimentation to determine something absorbable, an animal substance that could be sterilized, injected by syringe between the denuded ends of the bones entering into the proposed newly made articulation, and that would immediately solidify in such manner as to prevent contact for some six or eight weeks before absorption.

The idea was that this liquid would fill every nook and cranny of the joint and then solidify. On injection the liquid was to be at a temperature that would not scald, and the congealed substance was not to be absorbed before the denuded bone ends healed. Various fatty, waxy, and gelatinous substances were experimented with in regard to melting point and congealing point, and the rapidity of absorption was determined by injecting various mixtures and proportions subcutaneously into rabbits.

To make a long story short, yellow wax, 1 part and lanolin 5 parts, were the chief substances, this proportion determined on after careful study, melting at about 130° F.

Research in recent years aided by asepsis, in conjunction with the x ray and the employment of innocuous absorbable substances within stiff joints has conferred upon arthroplasty a new hope and boon to the very large number of those afflicted with stiff joints from tuberculosis, gonorrhea, osteoarthritis, rheumatoid arthritis, trauma, infections, etc.

Caution should be observed in not operating on an ankylosis due to an infectious arthritis until all inflammation has ceased and the joint has been quiescent a year or more. In the use of wax mixtures great care should be used in sterilizing in the autoclave at fifteen pounds pressure for thirty minutes, two days in succession, before introduction into the newly formed joint.

The employment of an *excessive amount* of wax in the articulation is also a mistake, as it is likely to cause such intraarticular pressure that the sutures may open, and *only sufficient* should be introduced as to separate or coat over the eroded bone areas. Traction by Buck's extension may be employed on the lower extremities after the first week in plaster of Paris, to increase, as far as possible, the intraarticular spaces or, preferably, the cast is left on a month. One must bear in mind that joints long unused and ankylosed become flat, not rounded, so that if we can prevent the reformation of ankylosis and adhesion, we can count upon use and functioning, according to Wolff's law, to reproduce *to a certain extent* a rounded articular surface with progressively increasing range of motion with the improved muscular power, which we at the time of the operation could only do imperfectly. This, however, does not mean that we should simply make a linear osteotomy between the component bones, but *each should be fashioned concave or convex* as nearly as possible like the normal articulation. This can be done by chisels and gouges of proper width and by special articular curettes or draw knives, such as the writer's.

For the acetabulum and femoral head special burrs should be employed, the former being only a trifle larger than the latter to allow for the interposing substance. The jigsaw or Gigli saw can only be used when articular ligaments can be avoided, as one must prevent flail joints. The more perfectly the joint is fashioned, the greater the liability to a good range of motion. All ligaments and as much capsule, bone, and cartilage as is possible are to be preserved.

The advantages of his method, the writer maintains, are, primarily, *the prevention of the reformation of bony adhesions* in properly done cases; the absence of pain, none of the cases reported below requiring any anodyne; the speedy, *voluntary* ability to move the joint as compared with other methods: the absence of fever and suppuration; the hemostatic value of the wax and absence of hematomata and ecchymoses afterward, and the rapidity with which the operation can be done, makes it a preferable procedure as compared with other methods.

OPERATIONS.

Operation I (rabbit No. 9).—Under ether and morphine anesthesia the left front leg was opened with strict asepsis at the elbow and the entire articulating surfaces were removed from the humerus and ulna down to the bone, so that with fixation and without the interposition of any substance, experimental ankylosis would result under ordinary circumstances. In this instance arthritic wax, composed of yellow wax 1, lanolin 5, was interposed, the capsule and synovial membrane and skin were sutured and the wound was sealed with collodion. The limb was splinted and strapped to the thorax for two weeks, when it was found the wound had healed *per primam*, there was no tendency to adhesions and there was free motion in the joint. At the present time, three months after the operation, the rabbit has good use of the joint and free movement in it.

Operation II. B. L., aged nine years, white, female; diagnosis: Infectious osteoarthritis (rheumatoid arthritis). Family history: Father died of pneumonia: four brothers and sisters died, cause unknown; mother and five sisters

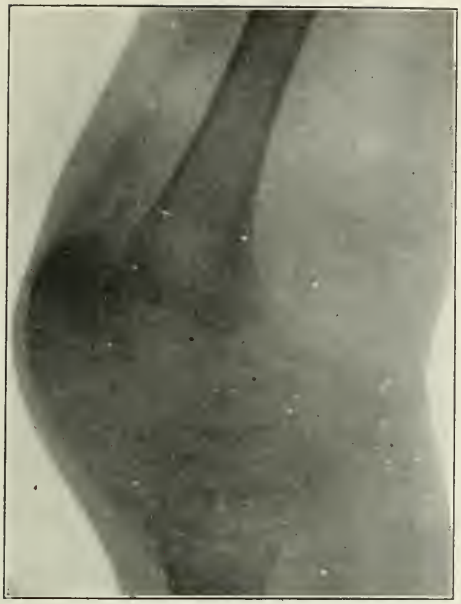

FIG. 1.—Ankylosis as a result of infectious arthritis of the knee before operation.

living and well; otherwise negative. Past history: Had had measles and scarlet fever; no other sickness.

Present illness began in 1909, following scarlet fever, with swollen joints which were very painful. No redness;

FIG. 2.—Infectious arthritis of the knee after Operation III, containing yellow wax, tallow, castor oil, and bismuth.

no sweats; slight fever at times. Swelling began in left ankle; later, left wrist became involved. Shortly after, patient had swelling in both knees and elbows which gradually grew worse.

Physical examination: On patient's admission it was noticed that she was fairly well nourished, but anemic and hyperesthetic. Pupils reacted to both light and accommodation. Mucous membrane fair color. Breath fetid. Two carious teeth (right upper premolar and left lower premolar) and two alveolar abscesses shown by x ray. Teeth were extracted and abscesses drained. Tonsils not enlarged, but congested, were dissected out by blunt dissection; both found diseased and cheesy and an appreciable amount of pus at the base of the right one was noted. There was an exacerbation of the symptoms in the joints after this for two weeks. Throat was well formed; expansion fair. Lungs clear throughout on percussion and auscultation. Heart not enlarged. Slight precordial heaving. No thrill. At apex a blowing systolic murmur was audible, heard over whole heart area. Abdomen negative

FIG. 3.—Infectious arthritis of the knee; result of Operation II.

as to abnormalities. Both knees ankylosed and flexed at 30°. Patellæ adherent and immobile. Ankles partly ankylosed, very painful on slight manipulation. Little swelling, local temperature not elevated. Hipjoints negative. Shoulder joints negative. Both elbows nearly completely ankylosed, left had about 20° of motion and right about 10°. Both wrists slightly swollen and painful on manipulation, as well as the carpometacarpal articulations. Slight ankylosis in both regions. Metacarpophalangeal joints were involved, as was second joint on middle finger of right hand. Spine was partly ankylosed in cervical and upper dorsal vertebræ, involving the costal articulations also. It was determined to try to give mobility to the right knee.

Operative technic, September 5, 1911. After the usual most scrupulous preparation, two incisions were made, one on each side of the patella, about eight cm. long, extending through the skin, fascia, and adipose tissue down to the thickened capsular ligament, the latter being opened, as was also the remains of the synovial membrane, now fibrous tissue. It was found that both surfaces of the membrane adhered and contained no synovial fluid, save a

FIG. 4.—Tuberculous osteitis of the knee. Case R. M., before ankylosis (Operation IV).

pocket just above the patella. Bony ankylosis was found between the femur, tibia, and patella on each side. By means of an osteotome and periosteal elevator the ankylosis was broken up, after which the necrosed bone was curetted away at the eroded points, also the diseased cartilage. No attempt was made to remove enough bone and remaining cartilage to permit of normal range of motion. The leg was flexed at an angle of about 45° and the bones pulled apart as far as possible, after which the articulation was filled with a mixture of wax, 1, lanolin, 5, cooled down to about 108° F., an abundant supply being put between the patella and femur, after which the joint was held at an angle of 45° until paste hardened, when the synovial membrane was sutured (also capsular ligament) with continuous silver wire. The wax mixture was sterilized, in a covered agate jar, previously melted and brought to the operating table in a water bath at the time of injection. A sterile thermometer was put in the wax and a second thermometer in the hot water. Injection was made with a urethral syringe, the temperature being also tested on the operator's arm.

After suturing the skin subcutaneously with silver wire, the wound was covered with silver foil and proper dressings, and leg put up in a plaster of Paris cast, at an angle of 45°. This cast was allowed to stay on for one week, then taken off, and the leg manipulated under anesthesia, after which patient was put up in traction. At the end of the second week, primary healing having occurred, all dressings were removed and extended manipulation was attempted, but this was too painful, so at the end of the third week the patient was anesthetized the second time and knee manipulated, it being found that there were only about 35° of motion, but the patella was freely movable and the limitation of motion between femur and tibia was due to malformation and transformation of the articular ends of the bones, and not to adhesions.

As this was not satisfactory, except in regard to the patella, and much of the limitation of motion was due to bone malformation, the previously thickened capsular ligament and close apposition of the bones not permitting enough wax to intervene, it was determined to reopen the joint, correct these errors, obtain free movement of the bones upon each other by sufficient excision, and to use a harder wax.

OPERATION III, October 27, 1911. On same joint, the right knee, the incision was made on inner aspect of the line of the scar of the previous operation, exposing the inner side of joint. The patella was found to be freely movable. On manipulation of the joint a small amount of wax preparation could be squeezed out of the deeper portion of joint cavity. A greater part of the wax preparation that had been injected during the previous operation had been absorbed. Some of the articular cartilage of both femur and tibia had been removed at the previous operation, but these bones were in too close apposition when joint was opened the second time to permit of any marked degree of motion.

There had been apparently some regeneration on the part of the femur; both the external and internal eroded condyles were found to have incapsulated in them the paste mixture which was injected at the previous operation; otherwise there were slight signs of regeneration.

A second incision was made on the inner side of knee, similar to one on outer side, and the entire knee joint exposed, after which a large portion of articular surface of the internal and external condyle was chiseled and curetted away, also a small portion of the articular surface of the tibia, leaving a gap of over one cm. on both inner and outer margin of joint. A large part of the capsular ligament was also cut away, but the crucial and lateral ligaments were preserved. The joint cavity was then filled with paste preparation, which filled every part of joint, as it was injected as a liquid. The paste consisted of the following proportions: Yellow wax, 1 part; mutton tallow, 2 parts; castor oil, 2 parts, with 15 grains to the ounce, by weight, of the mixture of bismuth subnitrate. This arthritic wax melts at 140° F. (60° C.) and is semisolid and begins to congeal at 128° (53° C.). (The mixture should be drawn up in the syringe again and again to get

FIG. 5.—Tuberculous osteitis of the knee, showing bony ankylosis between patella and femur and tibia and femur. Case R. M., lateral view.

FIG. 6.—Tuberculous osteitis of the knee. Case R. M., after ankylosis, anteroposterior view.

FIG. 7.—Tuberculous osteitis of knee. Case R. M., after operation, containing yellow wax, lanolin, cacao butter, and bismuth.

a uniform suspension of the bismuth and for cooling purposes.)

The leg was held in full extension with traction while the paste was injected and remained in that position while the paste was hardening, after which the wound was closed with silver wire, etc.

The leg was put up in full extension by means of plaster of Paris. An identical operation was then done on the left knee. At the end of ten days the casts were taken off and the leg manipulated; and they were found to have good motion and no adhesions. The legs were put up in extension by means of traction, a five pound weight being used on each and the patient encouraged to move the joints actively, several times a day. Three weeks after the second operation, patient had between 40° and 50° of voluntary flexion with little pain, and the remaining motion was simply restricted by voluntary muscular contraction and connective tissue formation. These operations were undertaken upon an active rheumatoid arthritis,

FIG. 8.—Case R. M., after operation, showing full extension.

although this acute condition could not be fully appreciated until the joints were opened and the extreme degree of osteoporosis was recognized. Reshaping the articular ends was easily done, owing to the still active chronic process; at the end of three weeks the patella was free and there were from 40° to 50° of motion in flexion, whereas, at the time of operation, there was none between the femur and tibia, and a true bony ankylosis with the patella existed. The continued activity of the disease caused a rethickening of the periarticular structures subsequently with loss in the gain made by the operation and the case is cited as a caution against attempts to restore mobility in any joint that has not been long quiescent. (See x ray pictures, Figs. 1, 2, and 3.)

OPERATION IV. R. M., aged seventeen years, white, girl. Diagnosis: Tuberculosis of right knee, which was ankylosed firmly in full extension. Family history: Father died of phthisis; mother living and well; one brother, two sisters, living and well. With exception of father, no other history of tuberculosis. No history of

FIG. 9.—Case R. M., after operation, showing voluntary flexion to 45 degrees.

joint or nervous diseases; no malignancy. Past history: Always healthy, except tumor albus (in 1900). Birth normal. Walked and talked at two years of age. No history of measles, mumps, whooping cough, or diphtheria. No tonsillitis. Patient subject to bronchitis. Gastrointestinal and genitourinary diseases negative.

Present illness: In 1900, patient had tuberculosis of right knee, which was treated, in the best environment, by bed traction and later by plaster fixation. It became ankylosed. Now no acute symptoms for several years.

Physical examination: Well nourished. Skin good color; tongue slightly coated. Lips and mucous membrane good color. No pain on mastoid pressure. No tophi. Eyes reacted to light and accommodation. Few cervical glands palpable. Thorax well formed. Inspection, palpation, percussion, and auscultation showed no pathological changes in heart and lungs. Abdomen negative. Extremities normal, with exception of right knee, which was completely ankylosed in extension.

Operation, October 20, 1911. A longitudinal incision about 10 cm. in length was made over anterior aspect of right knee, just to outer side of patella, and the joint readily exposed. The prepatella bursa contained a rather large amount of yellowish, caseous material which was curetted out before attempting to open the joint. The joint capsule was definitely thickened and there was a fair amount of granulation tissue about the same. This was cut away, as was the capsule, as far as possible. There was definite bony ankylosis of the joint of a marked eburnated character and this was more marked on the external portions. The patella was firmly ossified to the femur. The character of the bone in this case was in a marked contrast to the preceding case, in which the articular ends of the bones could be easily removed with a curette to the depth of 0.5 cm. The patella was first freed by osteotomy, and showed marked pathological changes, having more or less a wormeaten appearance, and the articular portion was easily rongeured away. An attempt was then made to render the joint movable, which was accomplished by chiseling away the articular portion of the external condyle of the femur and also a large portion of the articular surface of the tibia. At this time the knee could be flexed to almost 90°. After drying the wound thoroughly the cavity was filled with wax preparation consisting of the following proportions: Yellow wax, 1 part; cacao butter, 2; lanolin, 2; 15 grains of bismuth to the ounce of mixture. Melting point 130° F. The wound was closed with silver wire, silver foil, and dry dressings. The leg and foot were put up in a plaster cast in a position of full extension.

Four days after the operation the cast was taken off and the leg held in extension by traction, ten pounds being used. At this time the leg was slightly manipulated and found to be free from adhesions. On the tenth day after the operation the dressings were removed and the wound was found to be healed, save a small part of the incision at the lower end where the silver wire suture broke. Leg was manipulated under anesthesia and no adhesions were found. Afterward it was not necessary to give an anesthetic to manipulate the leg, as *the patient had been daily giving her joint frequent* active and passive movements. On the fifteenth day patient was allowed to walk on leg, she being able to flex the leg on thigh. One month after the operation, the patient had voluntary flexion of about 60°. There was a slight leakage of wax at the lower end of the incision where the suture gave way, but this readily healed and subsequently, one year after the operation, again reopened for a few weeks and then healed.

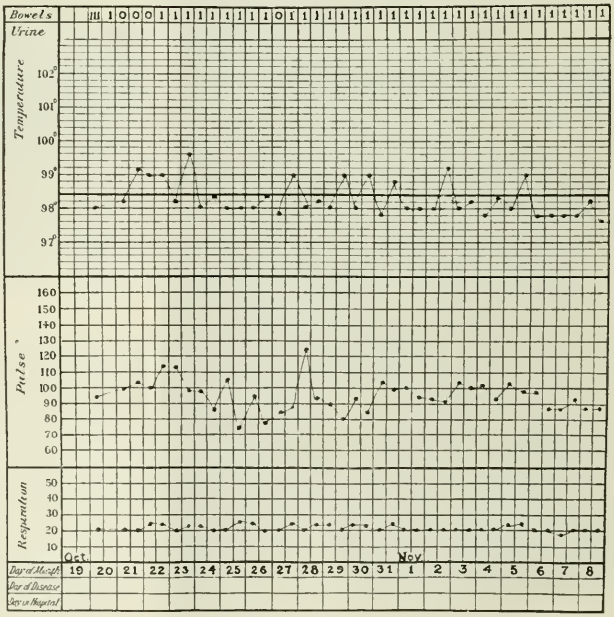

FIG. 10.—Chart, showing temperature, pulse, and respiration in Case R. M.

Fig. 11.—Case H. H. H. Normal hip.

The x rays and pictures of this case (Figs. 4 to 10) show the condition of the joints before and after the introduction of the wax.

Operation V, November 15, 1911. H. H. H., man, aged thirty-five years, had traumatic ankylosis of right hip of eleven years' duration (see Figs. 11, 12, and 13). The family history and personal history of this patient were negative in relation to his ailment. The traumatic history was incident to his occupation of consulting electrical engineer, as he had had two injuries to the same hip joint, one dating back eleven years, when a large piece of pipe fell in a building, striking him on the right trochanter and producing an impacted fracture and ankylosis for which he was treated in a hospital by traction in abduction for eight or ten weeks. The ankylosis hampered him in his work and the affected leg seemed a trifle longer and led to frequent stubbing of his toe. The second accident happened less than a year before the writer was consulted, and consisted of a fall from a building stage, of some fifteen feet, and striking on his right hip. On admission the leg was in full extension, but adducted 20° and there was an apparent shortening of 4 cm. and no motion in any direction. (The x ray picture made at this time, Fig. 12, shows the adducted position very well, as the trochanter minor is close to the tuberosity of the ischium and the crack in the head of the femur, as a result of the fall, is also shown. Comparison with the normal left hip, Fig. 11, makes this striking.) The patient was of a large frame and muscular type, and it was concluded that the anterior incision was preferable. Under ether anesthesia after a skin incision of 21 cm. extending vertically downward from the anterior superior spine, the tensor vaginæ femoris and gluteus medius were retracted outward and the sartorius and biceps retracted inward, and this gave a clear view of the capsule and neck of the femur. With an osteotome and large gouge, after incision of the thickened capsule was made on its anterior aspect, the femoral head was separated from the acetabulum, as close to the latter as possible, and the head rounded. The acetabulum was deepened as much as possible with curettes. Yellow wax, 1, and lanolin, 5, were injected, the capsule was sewed with three interrupted catgut sutures and the skin wound with continuous subcuticular silver wire. The healing of the wound was uninterrupted. A plaster spica to the toes was used for ten days and traction for a month. Three months after the operation the patient had voluntary flexion, 75°; abduction, 45°; adduction, 30°; outward rotation, 45°; inward rotation 45°. There were no adhesions and no shortening. Fig. 13 shows this re-

Fig. 12.—Case H. H. H. Traumatic ankylosis of right hip before operation; note the proximity of trochanter minor and ischium.

Fig. 13.—Case H. H. H. Traumatic ankylosis of right hip after operation; note new joint and separation of trochanter minor and ischium. Flexion 75 degrees. Adduction and abduction 45 degrees.

FIG. 14.—Case M. E. Tuberculous ankylosis of hip; position of flexion, 30 degrees; no motion; adduction, 20 degrees.

sult well, with the increased distance of the trochanter minor from the ischial tuberosity and the line between the femoral head and neck and new formed acetabulum.

FIG. 15.—Case M. E. Tuberculous ankylosis of hip, after operation. Motion, flexion 45 degrees.

OPERATION VI. M. E., girl, aged fourteen years, had tuberculous ankylosis of the left hip, of six years' duration. There had been no acute symptoms for three years. Family history was negative with the exception of her father, who had died of pulmonary tuberculosis. Personal history: The patient had had the usual milder exanthemata of childhood and only slight traumatisms which could have been remotely related in a causative capacity with the hip disease. When eight years old the left hip became painful, an abscess developed, and for three years the patient was off and on in various hospitals and summer homes for treatment, which consisted of bed traction, the use of traction splints and spicas. The patient on admission was a tall, thin girl with fair color, showing an extreme limp from the ankylosis of the left hip in a malposition. There was an apparent shortening of 12 cm. and the thigh was held in 30° of flexion and 20° of adduction. No motion in any direction. Under ether anesthesia (Feb. 19, 1912) the posterolateral incision was used, the curved lateral incision extending through the skin about 21 cm. from the anterior superior spine to the trochanter and then down the shaft of the bone and at its mid point a posterior incision about 10 cm. directly backward. Some fibres of the gluteus medius were cut and the other muscles, being retracted forward, gave a good view of the femoral neck and the remains of the head. With osteotome and gouge the ankylosis was cut through and head and acetabulum shaped, after which yellow wax, 1, and lanolin, 5, were injected at about 125° F. After the

FIG. 16.—Case M. E. Result of operation, legs parallel; no position of flexion or adduction.

FIG. 17.—Case M. E. Motion in flexion 45 degrees.

deformity was overcome, the leg—as in Operation V—was put straight in a plaster of Paris spica at first and traction used later. The healing was uninterrupted and the result, five months after the operation, was: Right leg, 84 cm.; left leg, 83 cm.; motion in voluntary flexion, 45°; rotation in and out, 25°; no adhesions can be made out and the malpositions in flexion and adduction are overcome. (See x ray pictures and photographs, Figs. 14 to 17.)

This operation was undertaken in this case in preference to the usual Gant's subtrochanteric osteotomy for the relief of the deformity and shortening with the hope of helping the motion somewhat, also.

OPERATION VII. E. W., boy, aged six years, had on admission firm ankylosis of the right hip, following tuberculosis. The disease dated back three years and there had been no acute symptoms for one year. The thigh was held at 90° with the body and there was no motion, and extreme limp forced the patient to stoop forward until the

FIG. 18.—Case VII, E. W. Tuberculous ankylosis of hip, before operation.

body was parallel with the floor at each step attempted with the right leg. There was some 45° also of fixed abduction.

The family and personal history had little bearing on this case. The child had been treated elsewhere by spicas in abduction. February 19, 1912, a posterolateral incision was employed and this patient was treated as the one in Operation VI, with the exception that no amount of bone that could be avoided was removed from the femoral head for fear of interfering further with the epiphyseal growth.

FIG. 19.—Case VIII, W. K. Tuberculous ankylosis of knee, after erasion, before operation for arthrolysis.

FIG 20.—Case VIII, W. K. Tuberculous ankylosis of knee, after erasion, before operation for arthrolysis.

FIG. 21.—Case M. K. Tuberculous ankylosis of the hip before operation. No motion. Position of flexion, 45 degrees; position of adduction, 30 degrees; result, motion, 60 degrees flexion.

The arthrolytic wax was used as in the last case and the same aftertreatment employed. The abduction and 60° of the flexion was overcome and this correction persisted. Six months after the operation there was 20° of motion in flexion with no reformation of adhesions. This patient will be kept under observation and further efforts made to improve motion and correct the remaining position of flexion of 30° in this very unfavorable case. (See x ray photograph, Fig. 18.)

OPERATION VIII. This was undertaken February 7, 1912, on a man, W. K., aged nineteen years, who had had a tuberculous ankylosis of the right knee in full extension for six years, the knee trouble dating back ten years, only in the first four of which did he have acute symptoms. His mother died of phthisis, otherwise his family and personal history was negative. He was a well nourished young man with good color. His knee, prior to admission for the restoration of mobility, had been treated in years gone by, by traction and fixation in plaster casts and also by an erasion the scars of which operation were visible on each side of the patella, as were the buried silver sutures in the capsule shown in the x rays picture. Under ether the old incisions were opened and much fibrous tissue was found which was dissected away with the exception of the lateral ligaments. The patella was chiseled free and the tibia and femur were cut apart. Owing to the change in shape from flattening of the ends of these large bones, it was not possible, without extensive articular destruction, to get more than 30° of motion at the time of the operation and from fear of rekindling the tuberculous process. The wax lanolin mixture, 1 to 5, was used and three months after the patient had 20° of flexion with no recurrence of ankylosis between the patella and femur or femur and tibia, but with some leakage of wax through the inner incision. (X rays, Figs. 19 and 20.)

OPERATION IX. M. K., girl, aged eighteen years, had had tuberculous ankylosis of right hip, of eight years' duration. Her hip trouble was thought by her family to have followed antitoxine injection for an attack of diphtheria, as a child. Her family and personal history was negative otherwise, and her physical examination showed an apparently normal girl other than the affected hip.

On admission, the position of flexion of the right hip was 60°; right leg was 87.5 cm. and left leg 93. cm. Apparent length measured from the umbilicus, right leg 96.

FIG. 22.—Case M. K., after operation, front view.

FIG. 23.—Case M. K., after operation, lateral view.

cm. and left leg 104. cm. Distance between anterior spines 27 cm. Right leg apparently adducted 30°. Right trochanter 4.5 cm. above Nelaton's Line.

November 4, 1912, under ether, an incision was made four cm. posterior to the anterior superior spine, extending in a curve down the thigh, convex posteriorly, for a distance of fifteen cm. and extending through the adipose tissue to the gluteal muscles. A posterior incision was made from the mid point of the lateral incision, extending downward and backward five cm., exposing the gluteal muscles. The fibres of the gluteus maximus and medius were separated, exposing the great trochanter. The top of this bone was chiseled off, exposing the neck of the femur. About one fourth of the head of the femur was resected, removing with a curette a considerable amount of osteoporotic bone. After this the acetabulum was smoothed with a curette. This allowed free motion of the ankylosed joint in all directions. The cavity was swabbed out dry and a mixture of paste, containing lanolin, 3 parts, and beeswax, 1 part, was injected. The capsule was closed with silk sutures. The great trochanter was fastened in place with silver wire. A silver foil dressing was applied, and the patient returned from the operating room in good condition.

Four months after, position of flexion was 0°; position of adduction, 10°; motion, 60° in flexion. (Figs. 21, 22, and 23.) There was some leakage of wax, which was too hard.

In subsequent operations to be reported later, it was found that patients do better with softer wax mixtures in the proportion of one of wax to ten of fat.

2000 Maryland Avenue.

THE CARE OF THE TUBERCULOUS EMPLOYEES BY THE CORPORATIONS AS EMPLOYERS.

By Alvah H. Doty, M. D.,
New York.

Those who are engaged in welfare work and in the advancement of preventive measures, and who have learned the importance of the early detection of tuberculosis, not only for the purpose of securing prompt treatment for those who are infected, but also to prevent the extension of this disease, are confronted with the very limited means provided by the various States and municipalities for the care of these patients. Even where public sanatoriums exist, the number of patients waiting to enter is so large that it is practically impossible to secure a reasonably early admission to these institutions. As a result, only a comparatively small number of applicants are able to obtain the benefits of early treatment, which is so essential to the recovery of the patient.

The most effective and certain means of eliminating tuberculosis is by isolation. There are numerous measures, it is true, which, if carried out at home, will aid in the recovery of the patient and diminish the danger of infection. But the class of people that constitute the greatest menace to the public health are those who live in restricted quarters where overcrowding and bad sanitation exist, and whose very limited income calls for the most rigid economy; besides, they have conditions to deal with which, from their standpoint, take precedence over matters relating to individual or public health. Therefore, under these circumstances, preventive measures receive but little attention, except through the persistent efforts of the welfare worker. In numerous instances the tuberculous patient may be one upon whom the family depends for support, and therefore cannot afford to give up his work in order to secure the benefits which a sanatorium extends. Still, there are many who are willing to supply financial help, and render in various ways substantial aid in saving the lives of these people, if proper facilities are provided for their care and treatment.

Institutions for the care and treatment of tuberculosis should, so far as practicable, be under State or municipal control, for, aside from the responsibility which the public must assume in protecting against this disease, this policy insures modern and uniform treatment and better discipline, and even though the service may not in all instances be free from expense to the patient, it is in any event reduced to the minimum. The inadequacy of the measures provided for the care and treatment of tuberculosis throughout the country is not by any means due to indifference on the part of the medical profession, and particularly health officials, who have labored long and earnestly to secure more satisfactory results in this direction, but is due chiefly to the lack of State and municipal appropriations for this purpose, and no one, who has had any practical experience in this direction, doubts that this condition will continue indefinitely, and that if further progress is made it must come largely through outside aid.

In recent years the crusade against tuberculosis has been practical and effective, and various companies and corporations, which have large numbers of employees under their direction, have been called upon to extend aid in this important work, and to closely observe their employees, in order that cases of tuberculosis may be early detected. There has been a very general and satisfactory response to this on the part of the employer, but he very pertinently asks, What shall be done with the cases of tuberculosis after they have been discovered? To this public health officials make no satisfactory answer, because they cannot furnish sufficient facilities for this purpose. This situation will not encourage employers in carrying out preventive measures. It cannot be expected that, in addition to other welfare work, they shall also build sanatoriums for the care of their employees who suffer from tuberculosis, when it is largely the duty of the State and municipal authorities to take care of these patients, as it is with other infectious or communicable diseases. Even if employers were willing to do this, it would result in the establishment of many private institutions, both good and bad, and with various methods of treatment and questionable discipline; furthermore, it would give rise to all sorts of criticism, and would be a constant source of worry to those who were responsible for their erection and maintenance.

I believe that the most important factor to bear in mind in connection with this subject, is that the elimination of tuberculosis depends chiefly upon isolation, and that so far as possible or practicable we should work in this direction. Even though incipient cases may not generally act as a medium of infection, it is very difficult to decide when the danger line is reached. The fact remains that if more

extended facilities were provided for the care and treatment of tuberculosis many more lives would be saved.

It would seem that under the circumstances presented the most practical and economical means of securing additional accommodations for the isolation and care of tuberculous patients, would be to allow individual companies, or corporations, to erect and equip, on the grounds of the State or municipal sanatoriums, cottages, or small buildings capable, for instance, of holding eight or ten patients, similar in construction and appearance to those already in use, or modified as the State or municipal authorities might direct, and solely for the care of employees of such individuals, companies, or corporations; *provided that the employees were also residents of the municipality or State supporting the sanatorium in question, and therefore equally eligible with others for admission whenever a vacancy should occur.* The advantage secured under this plan consists in the certainty with which the beneficiaries may promptly enter the sanatorium, without remaining indefinitely on the waiting list. Furthermore, this in no way interferes with the admission of others who are applicants for care and treatment in the said institution through the ordinary channels. Neither the individual or the company constructing these buildings, or the employees occupying them, should be entitled to receive any additional privileges, or a voice in the management of the institution. The patients sent in by the company would be under the same discipline and jurisdiction as those entering in the ordinary way. It would simply mean that those who were selected for treatment in the companies' buildings would secure prompt admission.

As these employees would also be eligible to admission to the institution on account of their residence, there would seem to be no just reason why any special charge should be made for their maintenance, provided the general service were free. Still it is not improbable that if it were required, those erecting the cottages would be willing to pay the estimated cost of the food supplied their employees, which would probably not be more than four or five dollars a week, and probably less. The comparatively small increase in the expense of the administration under this plan should very properly be borne by the sanatorium itself, for its usefulness as a public institution would be increased.

The advantage of this plan, so far as the State or municipality is concerned, consists in providing increased facilities at a much diminished per capita cost. For the employer it secures the advantage of a sanatorium for the prompt care of those in whom he is particularly interested, without the annoyance or expense of an administrative department, in the way of physicians, nurses, etc. A modest cottage or building for this purpose could probably be constructed and equipped for from $150 to $200 a bed, and the only maintenance charge, if any, would be that for the food already referred to. Furthermore, when no patients were under treatment there would be little or no expense involved. I believe this plan to be entirely practicable, and that it would bring about a closer relationship between the public and the employer. Moreover, by stimulating cooperation in this important matter it would lead to more far reaching results in the prevention of tuberculosis. There might be some slight technical legal objection to this plan on the part of municipal or State governments, but these could undoubtedly be removed by legislation if not in a more simple way.

66 West Fifty-eighth Street.

THE PHILOSOPHY OF PREVENTIVE MEDICINE.

By Alfred C. Reed, M. D.,
New York.

Few persons of intelligence would brave without concern the dangers of a smallpox or yellow fever camp. No one who has helplessly watched the death agonies that diphtheria forces on its victims will heedlessly expose himself to a similar peril. The hazards of pneumonia and typhoid are not to be lightly met by one who realizes how perfect is the title of each to the appellation, "the captain of the men of death." Even the disease to which John Bunyan first attached this appellation, tuberculosis, is worthy of severe respect from one who risks the chance of contracting it.

So we could go on through the list of those terrible enemies of humankind whose deadly menace we too often disregard or even scorn—until their venomous fangs strike near us. To see our own dear ones in the clutches of some disease monster, fighting ever so bravely a losing fight for mere life, for air to breathe, for existence itself—this tears to rags our smug assurance that disease is in the thought alone that pictures it. We come sharply to dagger's point with brutally naked reality. We appreciate that the primeval instincts of man are true. We know that some terrible force or energy or mind, terrible in its inexorable pursuit of cause with effect, inexorable in its obedience to some absolute law—we know that some such power has been set in operation by some cause which we may but imperfectly understand.

Such knowledge brings with it also the knowledge that, if we would control the operation of the great laws of Nature as they express themselves in disease, we must work in accord with those laws. We must understand the processes of disease, and so look for its secret sources and springs. We must learn to avoid setting in motion processes which will work out disastrously, and instead initiate processes and conditions whose unfolding and development will be beneficent and constructive.

Here is the philosophical location and function of the science of preventive medicine epitomized: Learn the natural history of disease, then for the conditions originating and favoring disease substitute conditions hostile to the seeds of disease and fostering the vitality of health. That is the science of preventive medicine. All the brave heroes who have paid with their lives for some advance in our knowledge of the natural history and favoring environment of disease, were soldiers under the white flag of health. The enemy has sadly torn the bat-

talions of this peaceful army, but the ranks are closed up and the fight never falters.

McClintic swept clean the Bitter Root Valley of spotted fever. What matter that his own was the last fatal case of the disease last summer in Montana? Carter, Lazear, Agramonte, Carroll, and Reed fought yellow fever in its stronghold and conquered it. Of what moment is it that three of them succumbed? Their work was glorious and their work will endure. What though the artificer fall, if he hath reared a structure worthy and fit, if through his work life is made safer, the world made cleaner?

Preventive medicine can be labelled and classified and put in pigeonholes. One of these is the prevention of communicable and epidemic diseases. One is the elimination of disease producing features from industries. One is the prevention of infant mortality. One is persuading people to live sanely and hygienically, in order to avoid premature senescence and decay. Another is teaching healthful sanitation, hygienic personal habits, and regard for the welfare of one's fellows. A very large pigeonhole is devoted to mental hygiene, and the maintenance of peace and poise of mind, preventing insanity, worry, morbid thinking, and despondency. All of them help us to reach a graceful, satisfying, and increasing old age, and prepare us systematically to enter with a calm and happy anticipation on our last slow pilgrimage.

Preventive medicine has this ideal, too, a eugenic ideal, of making each generation better than its predecessor, of racial and national development, of man's improvement measured in centuries. The motto of this ideal is education. Education in the principles of preventive medicine does not mean the mental accumulation of a conglomerate mass of details. It means an increasing and growing ability to live a clean physical and mental life, unconsciously and unhesitatingly obeying the simple rules of health. Knowledge of personal hygiene must become ingrained, instinctive, intuitive. It must regulate a man's conduct, not as an arbitrary restriction from without, but as an intrinsic desire for health and happiness.

There is one feature of preventive medicine of very recent growth which already is deserving of first rank in the attention of those interested in social betterment from any standpoint. This is the field of mental hygiene, a new science which seeks to control and prevent the present alarming increase of insanity and mental disorders of all sorts. A large proportion of insanities is due to well understood and entirely preventable causes. Insanity itself of whatever form is a disease, with as individual and distinct an entity as typhoid fever or tuberculosis. To do away with preventable insanity, to standardize and improve the care and treatment of the insane, and to foster eugenic principles of preventing the reproduction of the mentally unsound is the heroic burden of the national movement for mental hygiene.

The national committee of this movement has its headquarters in New York and its field activities directed by Dr. T. W. Salmon. It is hoped that soon each State will have an organization similar to the present Connecticut State committee. The work for New York State and city is being conducted by the committee on mental hygiene of the State Charities Aid Association. The mental hygiene movement is attempting with great success to meet the national need, by a campaign of education in the nature, cause, and prevention of insanity, urging earlier skilled treatment and advice for all mental patients, and furnishing preventive social service to persons threatened with or actually suffering from mental collapse.

The formal sanitarian and constituted public health officer must take the lead in securing public measures and legislation favoring better public health. It is his function to make detailed intensive investigation into the causes of disease, and from the standpoint of an expert to advise measures for its eradication and prevention. He must protect the intelligent and reasoning minority from the blind prejudice, ignorance, and indifference of the unthoughtful and careless majority. He must do this by the medium of education, since knowledge is the best remedy for narrowness, vice, social wrong, and preventable disease.

The concept of preventive medicine had its roots in the origin of society. One man alone needs no science of preventive medicine. Neither has he social relations or obligations. The development of society and relations between man and man brought at first mutual antagonisms, and the remedy for these was found in organization and social cooperation. This meant the elevation of the common or general welfare above individual and personal interests. Such an ideal, at first not consciously realized, was operative in respect to tribal or national self protection, in respect to the dealings of exchange and commerce, was evident in the development of religious conceptions, and laid the foundations for the modern dogma and science of public health and preventive medicine.

By the fourteenth century this slowly unfolding idea of public health protection suddenly leaped into prominence, strangely enough not as an altruistic social measure, but purely for commercial reasons. The prosperous Milanese and Lombardians of this period owed their affluence to the great Italian commerce with the Levant, but their vessels from the East had brought them also that dread visitor, the black plague. At first, persons having the disease were left alone in large fields to live or die by themselves. Death and confiscation of property penalized disobedience to the law which required this. In 1475, a Venetian sanitary council of three nobles was charged with the direct responsibility of preventing the entrance of epidemic diseases. Persons ill, or coming from infected ports, were then detained in lazarettos for forty days (*quarante dici*), whence came quarantine, and our splendid modern quarantine system. Quarantine, which thus sprang from an almost latent public health sense, has now become a humane and efficient instrument for preventing the spread of contagious disease. The Venetians regarded it as a means toward fostering commerce. We are coming to regard it as a social duty, necessary for the health and happiness of the community.

Some new term should be constructed to include all that belongs to the science of preventive medi-

cine. The name is itself a misnomer. Too often are its principles criticised, only because the meaning of the word is not comprehended. Nothing narrow will do; nor will a name suffice that does not sweep into its signification every agency and influence which contributes to man's uplift, to his moral, ethical, and esthetic development, as well as to his intellectual and physical perfection, for *that* is the goal of preventive medicine.

358 WEST TWENTY-NINTH STREET.

HOSPITAL URANALYSIS.*

Methods for the Rapid and Accurate Examination of Large Numbers of Urine Specimens in Routine Hospital Work.

BY VICTOR C. MYERS, M. A., Ph. D.,
New York,
Professor of Pathological Chemistry, Post-Graduate Medical School and Hospital.

For nearly two years, we have satisfactorily employed methods for the routine examination of a large series of morning urine, averaging forty to fifty specimens and amounting in certain instances to a hundred samples a day. These methods, we believe, have greatly aided in the rapidity with which the examinations could be made, without sacrificing the accuracy of any of the tests employed.

Collection of specimens. Each ward in the hospital is provided with a carrying box (Figs. 1 and 2) arranged to hold fourteen uniform twelve ounce bottles. With these, the various specimens are brought to the laboratory at 7 a. m., and arranged in order according to wards, except that the specimens from patients for morning operation are set aside for first examination. The bottles bear a label with a blank space for the following items: Date, ward, name, amount in twenty-four hours, by catheter, rush for operation, and special requests. The urine of patients to undergo operation is labeled in red ink.

Arrangement of specimens. Upon beginning work, the interne having charge of the urine work arranges a series of report pads to correspond with the number of wards from which specimens have been received. A carbon sheet is inserted in each of these pads and the carbon copy kept on file in the laboratory office, according to ward and date.[1] After the specimen bottles are arranged in order according to the wards, the names of the patients and the twenty-four hour volumes,[2] if given, are recorded on the charts, numbered, and the large test tube (Figs. 1 and 2) in the rack having the corresponding number three fourths filled with urine. In this way, work may be begun on a large series of examples of urine without any confusion.

Special test tube rack. The racks as shown in Figs. 1 and 2 are arranged for three series of test tubes, the lower of which holds heavy tubes, one inch in diameter, in which observations of the color, reaction, and specific gravity are made, and from which samples of urine are taken for the tests for sugar and albumin, or other tests desired. The second

FIG. 1.—Showing test tube racks and carrying box used for collection of specimens of urine.

*This scheme comprised the demonstration of the Laboratory of Pathological Chemistry of the New York Post-Graduate Medical School and Hospital on November 12, 1912, to members of the Clinical Congress of Surgeons of North America.

[1]As soon as reports are finished they are at once sent to the laboratory office, and the original copies taken to the wards by the laboratory messenger, who makes the rounds of the wards at regular and frequent intervals to collect specimens and return reports. For emergency specimens, the messenger is on telephone call at any time during the day.

[2]When special quantitative determinations are desired, the whole twenty-four urine samples are sent to the laboratory in appropriate two and three litre bottles.

series of tubes is employed for the qualitative sugar test, while the upper row is used for the albumin test.

Color, reaction, specific gravity. After samples of the various specimens have been removed to the large tubes in the racks, the reaction is taken by tearing off small pieces of litmus paper and dropping in the whole series of tubes. When a specimen is observed to be alkaline, the tube is tipped by pulling the upper part of the tube outward. The color, reaction, and specific gravity are then recorded in the whole series of tubes, the color charted according to the Vogel scale, the reaction recorded as acid if the tube has not been tipped, otherwise alkaline, and the specific gravity taken with a urinometer in tube 1, carefully drained, and then placed in tube 2, etc. In this way, the volume, specific gravity, color, and reaction may be charted very rapidly.

Albumin and sugar. The cold nitric acid test is employed for albumin, and Benedict's test for sugar. One c. c. of concentrated nitric acid is poured in each of the upper series of test tubes and five c. c. of Benedict's qualitative solution in each of the middle series of tubes. A small bulbed pipette with a rough edge at the tip (simply a small unannealed glass tube) is taken and about one c. c. of urine in tube 1 drawn up, then inserted into the corresponding nitric acid tube to a point slightly above the urine, and gently allowed to flow out. In this way, a perfect stratification may be obtained very quickly without removing the tube from the rack and inclining.[3] At the same time about eight drops of the urine are added to the corresponding tube of Benedict's solution. After washing out the pipette with water in a cylinder conveniently placed, the operation is repeated in tube 2. When this operation has been carried out on the first twelve tubes, the results of the albumin test are recorded.[4] This will allow from three to five minutes, about the right length of time for the development of the ring in case only a trace of albumin is present. Upon completing the albumin tests, the tubes of Benedict's solution,[5] to which the urine has been added, are agitated and inserted in their numerical order in the numbered place in a special copper rack (Fig. 2). The tubes are then immersed below the level of the Benedict solution for two minutes in a bath of saturated calcium chloride,[6] which has just been brought to the boiling point, and the flame is removed. At the end of the two minutes, the rack is removed and the num-

Fig. 2.—Showing special copper rack used in applying Benedict's test.

bers are noted on any tubes which show a positive reaction. Record is made of these tubes in the charts and the other tubes are recorded negative. Where the qualitative tests have indicated much over a half per cent. of sugar, the amount is estimated quantitatively, either with Benedict's volumetric method or the polariscope.[7]

Acetone and diacetic acid. When sugar is present acetone and diacetic acid are routine tests.[8] Rothera's test for acetone is employed as follows: To five to ten c. c. of urine are added a gramme of ammonium sulphate and a few drops of freshly prepared aqueous sodium nitroprusside and then from two to three c. c. of strong ammonia. The presence of acetone is indicated by the development of a characteristic permanganate color. For diacetic acid the

[3]For further details and other tests for albumin, see Myers and Fine: *Post-Graduate,* xxvii, p. 800, September, 1912. For the quantitative estimation of albumin, the Purdy method as here described is generally employed

[4]Not infrequently, turbid urine is observed, in which case it is necessary to filter before applying the albumin test. If simple filtration through good filter paper does not accomplish clarification, this may be brought about by shaking with diatomaceous earth and again filtering.

[5]Benedict's qualitative solution deserves more than passing notice in this connection. It is a permanent single solution, about ten times as sensitive to sugar in urine as Fehling's or Haines's solutions, but, unlike these latter, it reduces less readily and is not appreciably affected by creatinin, uric acid, chloroform, or the simple aldehydes. Because of these properties it is necessary to boil the solution for from one to two minutes after adding the urine, rendering the test available for carrying out a series of tests as described. The appearance of a positive reaction is slightly different from the older copper solutions. When glucose is present, the entire body of the solution will be filled with a precipitate, which may be *red, yellow,* or *green* in color, depending upon the amount of sugar present. The solution is composed of 17.3 grammes of copper sulphate, 173 grammes of sodium citrate, and 100 grammes of anhydrous sodium carbonate (double the weight of the crystalline salt may be employed) made up to one litre with distilled water. In the preparation of the solution, the copper sulphate should be dissolved separately in about 100 to 150 c.c. of distilled water and then added slowly with constant stirring to a filtered solution (about 800 c.c.) of the other ingredients and finally made up to one litre. For further discussion of the test, the following references may be consulted: Benedict: *Journal of Biological Chemistry,* v, p. 485, 1909; *Journal of the American Medical Association,* lvii, p. 1193, 1911; Myers: *Münchener medizinische Wochenschrift,* lix, p. 1494, 1912; Myers and Fine: *Post-Graduate,* xxvii, p. 912, 1912; Hawk: *Practical Physiological Chemistry,* fourth edition, p. 328, Philadelphia, 1912.

[6]Dr. Jonathan Wright, director of the laboratories, urged that to save time we devise some scheme by which it would be unnecessary to boil the sugar tests singly, and suggested that a saturated salt solution might give the desired temperature. Upon this suggestion, the foregoing method was devised.

[7]For discussion of clinical methods of accurately estimating sugar, see Myers: *Münchener medizinische Wochenschrift,* lix, p. 1494, 1912. Benedict's volumetric method is very simple, requires no expensive apparatus, is rapid, and, as we have found, very accurate. Description of methods is given by Myers and Fine, *Post-Graduate,* xxvii, p. 914, 1912.

[8]The tests we emnloy are further described by Myers and Fine: *Post-Graduate,* xxvii, p. 1135, December, 1912.

simple Gerhardt test is employed. This consists in the addition drop by drop of aqueous ferric chloride to five c. c. of the urine under examination, when in the presence of diacetic acid a Bordeaux red color develops. This color is sometimes masked by the precipitate of ferric phosphate, in which case this should be removed by filtration and more ferric chloride added.

The degree of acidosis, if present, may be simply determined by the estimation of the ammonia by the formaldehyde titration method.[9]

Charting of qualitative tests. For the sake of uniformity, all qualitative reactions, albumin, sugar, acetone, diacetic acid, indican, etc., are described as follows: *faint trace* (albumin), *trace, small amount, moderate amount, large amount, very large amount.*

Microscopical examination. When the chemical tests have been completed and recorded, the sediments in the specimen bottles of urines 1 and 2 are poured into two centrifuge tubes, appropriately marked and centrifuged for a couple of minutes, whereupon the supernatant urine is poured off and the sediment spread over slides of double width and examined under the microscope with low power objective, high power eye piece, and greatly reduced light. While the sediments of urines 1 and 2 are being examined and recorded, 3 and 4 are being centrifuged, etc. The following terms are employed to apply to both organized and crystalline sediments and to give a good idea of the relative abundance of the constituents reported: *an occasional* hyaline cast, *a few* uric acid crystals, *a moderate number* of pus cells, *many* finely granular casts, *very many* calcium oxalate crystals.

The ward reports give the attending physician at a glance the condition of the urine of the various patients of the ward upon which the routine examinations have been made. They are subsequently copied in the individual case histories.

DEPARTMENT OF LABORATORIES.

[9]For technic see Myers and Fine: *Post-Graduate*, xxvii, pp. 712 and 1133, 1912.

ENCHONDROMA OF THE SCAPULA.*

By WILLIAM D. MININGHAM, M. D.,
Newark, N. J.

Because of the extreme rarity of large enchondromata of the scapula, this case is of sufficient interest for publication.

CASE. The patient, R. T., male, aged twenty-five years, was referred to me in October, 1912, with the following history: Twenty years ago a growth appeared on the dorsal surface of the right scapula. The tumor was painless and grew slowly until two years ago, since which time the patient thought it had been stationary. Upward and backward movements of the arm were restricted. For ten months there had been a deep ulcer on the most posterior portion of the tumor, which showed no tendency to heal under treatment. Examination showed a large hard nodular mass, the base of which extended over the entire length of the scapula and laterally from the vertebral border to the neck of the bone. The overhanging portions projected well beyond these limits. The weight of the tumor produced a lateral curvature of the spine and a marked depression of the right shoulder. He had been exhibited many times before medical societies as inoperable, and was rejected from three hospitals.

In view of these facts I naturally hesitated about operating. Dr. Edward J. Ill gladly consented to see the patient, and he strongly advised me to excise the whole mass, leaving just enough of the scapula, if healthy, to preserve the shoulder joint. Doctor Ill also very kindly assisted me with the operation at St. Barnabas Hospital, and to him I give all credit for a happy outcome.

FIG. 1.—Left lateral view of patient.

FIG. 2.—Right lateral view of patient.

FIG. 3.—Patient two weeks after operation.

OPERATION.

An elliptical incision was made around the tumor (roughly estimating a sufficient amount of skin to cover the raw area) and the skin dissected well backward around the base. By means of a Zweifel ligature carrier, a silk thread having a Gigli saw attached was drawn under the neck of the scapula. The bone was then easily sawed through. This procedure mobilized the entire mass, which was then separated from above downward without any difficulty. Many muscles had to be severed and hem-

*Reported before the Surgical Section, Academy of Medicine of Northern New Jersey, December 17, 1912.

orrhage was sharp for a moment, but easily controlled. The subscapularis muscle was then sutured over the remaining portion of the scapula and the skin wound was closed.

Healing by primary union was complete in ten days. The tumor weighed seventeen pounds. Dr. Harrison S. Martland reported the tumor to be an enchondroma, showing extensive deposits of lime salts. Dr. Charles F. Baker made some excellent x ray plates of the case, and I herewith wish to express my thanks.

The patient is now perfectly well, and since the operation he has been employed as a carpenter and driver of a delivery wagon. All movements of the right arm are good, except motion in a backward direction and abduction in a straight line.

448 High Street.

PYLOROSPASM WITH GASTRIC TETANY.

Cured by Gastroenterostomy.

By Robert L. Pitfield, M. D.,
Philadelphia,
Physician to St. Timothy's and Chestnut Hill Hospitals.

Case. Mrs. C., married, thirty-five years of age, and mother of two children, had been invalided by a curious recurring nervous disorder which had been increasing in severity during the year previous to her coming under observation. Always since a little girl had she been a sufferer from indigestion, and she remembered while a small child, descending to her father's apothecary shop from her bedroom for something to relieve her.

At one time she was quite fat, weighing over 180 pounds; but after two abdominal operations, one for the removal of her myomatous uterus, and another for a thickened appendix, she began to lose weight, and nervous spasms of her muscles developed. Superficially there were several things about these attacks to make her surgical attendant think that they were manifestations of hysteria; and associated with them there was recurrent vomiting, occurring after most of her meals. Sometimes she would empty her stomach after dinner, only to eat more and then have to vomit again. From this cause she became emaciated, and her weight was reduced to eighty-two pounds; her skin became muddy; acne covered her face, and at times her lips would become livid.

During her nervous attacks there were several regular features occurring each time; the arms and legs became overextended, her feet assumed the position of talipes equinus and were abducted; the fingers of each hand were thrust straight out, and her thumbs were drawn strongly across the palms of her hands—the "obstetrical hand," as it has been termed. Her head would then be drawn back, her neck was rigid, all the face muscles became tense, her lips would purse up as if for whistling, the eyes became fixed and staring, and, if the attack was a severe one, she would exhibit delirium; she became incoherent and screamed constantly in an hysterical fashion, fitfully and disorderly. Her respiratory muscles partook of this spastic condition, as was evidenced by the breathing difficulty and cyanosis.

For several hours, Mrs. C. would be in this condition, and generally at night these attacks would come on. Morphine or chloral was often resorted to to allay the spasms and quiet the delirious crying out. After recovering her normal muscular tone she would be sore as if pounded, and bedfast from exhaustion and pain. Sometimes lightning pains in the vagina added to her misery. At any time it was possible to elicit Trousseau's phenomenon by grasping her arm above the elbow and tightly squeezing it, whereupon her hand would slowly assume the posture described in a state of spasticity. On tapping her facial nerves, the muscles controlled by them would become spastic (Chvostek's sign). Erb's and Hoffman's signs were not looked for or elicited. For several years gastric lavage was resorted to in order that the distress in her stomach might be alleviated thereby. And that there was a strong connection between this gastric distress and the tetanic condition of her muscles, was shown by the fact that sometimes this tetany could be averted by this manœuvre. Hardly a day passed in which she had not recourse to the stomach tube.

On inflating her stomach it was found to be very distensible, filling the whole upper segment of the abdomen completely from the xyphoid cartilage to below the navel, and from one costal margin to the other. At rest the abdomen appeared flaccid, pendulous, and wrinkled; the costal angle was acute, and the tips of the tenth ribs were freely movable; the liver, while somewhat low, was negative otherwise. Habitual constipation always annoyed this patient; sometimes for ten days her bowels would not be emptied.

On stroking the epigastrium, the stomach walls could be seen to stiffen, and marked peristaltic waves appeared. The pylorus could not be found, but the stomach stiffenings of Cohnheim were evidence of some obstructive lesion at this orifice. On overinflating the stomach the air would cause much distress; finally the pyloric sphincter would allow it to pass to the intestines, filling one loop after another in a very graphic way.

Feeling that there existed a dilated as well as a ptosed stomach, a test meal was given, and at the end of an hour about 400 c. c. stomach contents were extracted. This was acid and smelled offensively. It speedily separated, the solid parts floating to the top. An analysis showed that it had the following chemical components: Free hydrochloric acid, 30; total acid, 63; combined acid, 25; no free or occult blood, no lactic acid, starch granules, oil globules, nor Oppler Boas bacilli found.

After taking the test meal the stomach became distended, tense, and evidently distressful to the patient. On stroking, the peristaltic waves appeared.

A radiograph made by Doctor Pancoast revealed a ptosed, vertical organ, occupying the left half of the abdomen, with the lower curvature about four inches below the umbilicus, and the pylorus at this landmark. The exposure was made six hours after taking the bismuth meal, and the picture showed marked retention. The horizontal line bounding the pyloric portion of the stomach is called Holzknecht's line, and indicates pyloric obstruction.

It was felt that there was a mechanical cause for obstruction, and a gastroenterostomy was advised by Dr. Joseph Sailer, who saw her in consultation. Her physical condition at this time was very poor. From the fact that very little water was absorbed the urine was exceedingly scant and very highly colored, but was otherwise normal. Her blood examination showed a marked anemia of the chlorotic type: Hemoglobin, 34 per cent.; red cells, 2,980,000; white cells, 7,000; lymphocytes, 28 per cent.; polynuclears, 70 per cent.; hyaline cells, 2 per cent.

Dr. John G. Clark, who also saw the patient in consultation, concurring in the same view, operated. On opening the abdomen the stomach was found to be empty, collapsed, and small, occupying the epigastric region, and exhibiting no signs whatever of past misconduct. There were no scars or strictures about the pylorus, nor were there any evidences of old ulcers in the stomach or duodenum. The gallbladder was empty and healthy. In spite of the normal appearance of the stomach, and reviewing the history of vomiting, obstruction, emaciation, and all the ills following in the train of the pylorospasm, Dr. Clark wisely decided to continue, feeling that the dilatation and the tetany were due to some reflex contraction of the pylorus beyond medicinal control. Accordingly a posterior anastomosis of the stomach and jejunum was quickly done, the pylorus being tied off and severed, the ends sewed in. After the operation the patient rallied well, vomiting ceased in twenty-four hours, and she partook of liquid food by the mouth. Tetany vanished absolutely, and it is now impossible to elicit Trousseau's or Chvostek's sign.

The patient gained twenty pounds in six weeks, could eat anything, and at the end of eight months was quite restored to health. Vomiting of bile colored fluid occasionally happened, especially if the arms were raised above the head.

It is held by some observers that the great reason why gasteroenterostomy does good in cases of excessive acidity, is that the regurgitation of the alka-

line duodenal juices into the stomach neutralizes the excess of acid, allays pain, and diminishes hyperesthesia, spasticity, and stiffening.

From the foregoing narrative it is evident that the tetany was of gastric origin, and that it is wise to operate to relieve a functional as well as a mechanical disability; pylorospasm being as strong an indication for gastroenterostomy as stricture is.

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MITRAL STENOSIS.

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In what follows I shall not take up signs, symptoms, etc., in orthodox sequence, but try to make clear a few matters connected with mitral stenosis, which I have reason to believe are not entirely clear in the minds of many. Yet the points I shall touch upon are of sufficient importance to make a clear understanding of them desirable, and an aid to intelligent treatment.

The mechanical disturbance which results from a *stenosis* of the mitral orifice produces a difficulty in *filling* of the left ventricle. It is here to be borne in mind that the mechanical disturbance which results from a *regurgitation* at the mitral orifice, on the contrary, causes a difficulty in *emptying* of the left ventricle (in the proper direction). In the case of a pure mitral stenosis (without accompanying regurgitation), the left ventricle has no difficulty in emptying itself of the normal proportion of its contents, and in the normal direction, i. e., into the greater circulatory tree.

The statement is commonly made that a regurgitation at the mitral orifice superadded to a stenosis diminishes the mechanical embarrassment by diminishing the obstruction. But we have noted above that stenosis reduces ventricular filling, and in consequence does not permit of a sufficient auricular emptying. The result is a supernormal auricular content and pressure during auricular relaxation (and ventricular systole). Again, when the mitral orifice is incompetent, the left ventricle, during systole, forces some of its blood backward into the left auricle, thus in another manner causing a supernormal auricular content and pressure during auricular relaxation (and ventricular systole). I believe it thus becomes apparent that superadding a regurgitation at the mitral orifice to a stenosis already existing is merely adding to the embarrassment of the left auricle, for both lesions hamper it in the same direction, though by different mechanisms. While it is true that *anatomical* stenosis may be reduced in degree by a shrinking of the free edges of mitral cusps which have produced stenosis by their lateral adherence, the *functional* embarrassment of the left auricle is in such manner not at all reduced, for the extra quantity of blood given entrance to the ventricle during its diastole is quickly returned to the auricle through the now incompetent valve during the following ventricular systole, and the *peripheral circulation* is not improved.

The same arguments hold true in regard to the functional effect of the superaddition of stenosis to an existing mitral regurgitation, and I cannot understand such statements as, for example, the following by Krehl: " . . . Indeed, we may say in general that the stenosis which so often follows

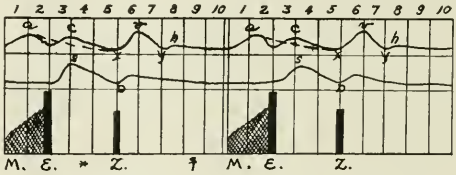

FIG. 1.—Representing two heart beats at the rate of 60 a minute, each space one tenth of a second; *space E to Z, short pause; † space Z to E, long pause, ventricular diastole (actual time occupied by diastole is a little less than here indicated); illustrating *crescendo* auriculosystolic murmur. E, first sound; Z, second sound; M, auriculosystolic cresendo murmur. Upper tracing, jugular vein; lower tracing, artery.

a valvular insufficiency may be of advantage in that it may limit the amount of blood which regurgitates!" As a matter of fact, a pure mitral stenosis without accompanying regurgitation of greater or less degree, is comparatively rare.

The pressure in the left auricle and resistance at the mitral valve ahead being abnormally high, the auricle hypertrophies, in order to compensate for this excessive resistance. This is the first compensatory or secondary change that occurs. By the older methods of physical examination it was not easy to detect this, for the auricle must be considerably enlarged to present clear evidence of enlargement to percussion. (I mean percussion by the ordinary mortal with only a prosaic imagination.) Then dullness in the second intercostal space, to the left of the sternum, gives evidence of the enlargement of the left auricle. The electrocardiogram, however, gives very distinct evidence of auricular hypertrophy in an enlargement of its P wave—the wave of auricular complex—and shows it at a time when this state could be deter-

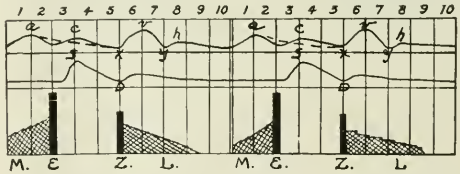

FIG. 2.—Same as Fig. 1. L illustrates the *decrescendo* murmur, separated from M by a pause; sometimes L runs into M without any pause between them. When the auricle is paralyzed or fibrillates, and the A wave has disappeared from the jugular curve, M disappears, while L persists. Upper tracing, jugular vein; lower tracing, artery.

mined positively, in no other way. The amplitude of this P wave of auricular complex may reach and even exceed one fifth the amplitude of the R wave of the ventricular complex, while the normal amplitude of P is one tenth that of R. It may be of interest to note that the left auricle, which has

a normal capacity of about sixty c. c., late in the disease may be enlarged to such an extent that it may hold as much as from 2,500 to 3,000 c. c., or about half the total quantity of blood in the body. It is not surprising that such an auricle may give signs of thoracic aneurysm, even to symptoms of pressure on the left laryngeal nerve.

When the increased pressure in the left auricle is no longer entirely compensated by the auricular hypertrophy, there results an abnormal degree of resistance to the entrance of blood into the auricle from the pulmonary veins, with a consequent rise of pressure in the pulmonary veins and entire lesser or pulmonary circulation. The next step back is a rise of pressure in the pulmonary artery, to balance which the right ventricle must hypertrophy. This is the state of affairs in the early stage of decompensated mitral disease. When the tax on the right ventricle becomes too great for it and it dilates, we get a functional stretching of the tricuspid orifice, with secondary tricuspid regurgitation, increased pressure in the right auricle, excessive resistance to emptying of the venæ cavæ, with venous stagnation in the greater or systemic circulatory tree, and all the phenomena dependent on a failing right heart. This is the late stage of decompensation.

Now, in all said above, the condition of the left ventricle was not considered, but it does not fail to suffer in mitral stenosis. In cases of pure stenosis the quantity of blood entering the left ventricular chamber is reduced, and its nutrition suffers because it lacks opportunity for the full exercise of its muscle power. Also the blood supply to the muscle is reduced. Thus the left ventricular muscle atrophies to some extent, becoming smaller and weaker. When regurgitation accompanies the stenosis, depending on the degree of the former, we get more or less transverse enlargement of the left ventricle.

In all cases of valvular disease the heart muscle also suffers, and this is true to a very great extent in mitral stenosis. As a consequence of this, and because of the marked tax put on the auricle in this disease, a state of auricular fibrillation is a common event in the late stages of mitral stenosis. The junctional tissue between auricle and ventricle, the so called bundle of His, is also very commonly the seat of disease, and both these factors are of much importance in determining the prognosis of the lesion under consideration.

SYMPTOMS.

Patients with mitral stenosis may for many years be ignorant of their condition, just as may patients with other valve lesions, because it gives them no symptoms and causes no functional disturbance of any part of the body. Such patients usually have a color of the face and lips which makes the initiated suspicious. They may be perfectly well nourished, and have what at first glance looks like an excellent color of the cheeks, but which, on closer scrutiny, particularly in diffused sunlight, proves to be a purplish red. The color of the lips is a shade or two too dark—a cherry red.

Patients with only a little more disturbance of circulatory function may, for no apparent reason, get frequent attacks of bronchitis. This is really a mild congestion of the bronchial mucosa, either entirely due to circulatory disturbance or predisposed to by circulatory disturbance, and excited by minimal degrees of extraneous irritation or infection. This same process carried further results in more symptoms of early decompensation, from excessive accumulation of blood in the lesser circulatory tree. Now the patient suffers from more marked cyanosis, varying degrees of dyspnea, and troublesome cough, accompanied by a blood streaked or bloody expectoration, and in severe cases hemoptysis which may even be copious. These cases with cough and blood expectoration as their main symptoms, are too often mistaken for cases of pulmonary tuberculosis and seriously mismanaged, often for some years. This error is the more readily committed because the physical signs of mitral stenosis are notoriously inconstant, as will appear below.

The further advance of the process leads finally to a giving way of the right side of the heart, often accompanied by auricular fibrillation, with all the train of well known symptoms dependent on right heart failure, such as edema of subcutaneous tissues; enlargement, tenderness, and expansile pulsation of the liver, ascites, hydrothorax, usually of the right side, and orthopnea. Of these, hydrothorax and orthopnea require a word of explanation.

Hydrothorax. It would ordinarily be expected that a pleural transudate dependent on circulatory failure should be bilateral, but, as a matter of fact, in the large majority of cases hydrothorax is unilateral and right sided. This is probably due to pressure on the great azygos vein by the enlarged right heart. This vein drains the pleural sac, and its obstruction and stagnation in its tributaries are predisposed to by the oblique entrance of the great azygos into the vena cava superior. Some standard textbooks still make serious mention of a greater frequency of lying on the right side as a predisposing factor to the accumulation of pleural transudate on this side.

Orthopnea. Although in the sitting posture, compared with the reclining, the venous circulation in the trunk and extremities is slowed and dropsy in the parts is increased; the difficulty in breathing which the patient experiences in the flat position is considerably diminished by the assumption of a sitting posture. In fact, the reduction in the rate of return of venous blood to the right side of the heart which this posture favors, reduces the amount of venous blood thrown into the lungs, and gives what does get there a better chance for aeration. It also reduces the tax on the relatively feebler left ventricle, permitting it more effectively to aspirate the blood from the lungs. Furthermore, with the head up, the return of venous blood from the base of the brain is favored by gravity, diminishing the stimulation of the respiratory centre by excessive carbon dioxide, and so reducing dyspnea. It is also probable that gravitation of the abdominal viscera away from

the thorax, which the sitting position favors, by reducing the crowding on the heart and lungs, gives these organs freer play, and reduces respiratory difficulty.

PHYSICAL SIGNS.

We shall not consider all the physical signs of mitral stenosis, but only such as demand some explanation. Characteristic are the pulse, the thrill, and the sounds and murmurs audible over the precordium.

Pulse. The pulse, except in the stage of auricular fibrillation, is relatively not as rapid as in other valve lesions. This is a conservative process, because it requires a long diastolic period for the left ventricle to be filled through its narrow mouth. The pulse is small, because of a diminished volume of blood entering and leaving the left ventricle. With a gradually increasing stenosis and diminishing volume of blood driven into the aorta and its branches, the vessels are accustomed to an increasingly smaller blood stream, and accommodate themselves to this by a gradual vasoconstriction. In this manner the systolic blood pressure in the arteries may be maintained at a normal level, while the diastolic pressure rises and the pulse pressure (the difference between systolic and diastolic pressures) falls. The pressure in the systemic veins also is reduced. When auricular fibrillation sets in, the pulse becomes very rapid and disorderly, with no definite rhythm and no constant force. It is also common knowledge that the rate at the heart may be greater than at the pulse, because some beats are too feeble to propagate a wave to the wrist. The precaution of counting the beats at the heart and comparing with the pulse rate should never be omitted when examining patients with decompensated hearts, no matter what the lesion.

Partial heart block, as manifested by a prolongation of the A to C interval, is a not infrequent event. Whenever the heart becomes slowed down to sixty-six or less, this manifestation should be carefully watched for. As noted in the beginning of this article, disease of the auriculoventricular bundle is not uncommon in mitral stenosis. With a slow heart and the auricle beating regularly, a prolonged conduction period may be made out by auscultation, with some little confidence. This is possible by noting the interval between the *crescendo* auriculosystolic (presystolic) murmur, which is the index of auricular contraction—corresponding to the A wave of a jugular pulse tracing—and the snappy first sound following it, which is the index of ventricular contraction—corresponding to the C wave. When the patient is frequently examined, especially when he is on digitalis medication, the prolonged interval may sometimes be determined in such manner with a fair degree of certainty. But great caution should be observed in risking this interpretation, for one must be certain that he does not mistake a *decrescendo* early diastolic murmur for a *crescendo* auriculosystolic murmur, since the former is no index of auricular contraction at all. Hence, when suspecting a prolongation of the A to C interval, it is much safer, if deemed important, to make polygraphic tracings.

Thrill. The thrill of a rumbling nature, palpable over a limited area of the precordium, is dependent on the same factors as the stenotic murmurs, and its qualities correspond closely to those of the murmurs. It is quite characteristic of this lesion, when manifest, and undergoes changes during the course of the disease which correspond with the changes which the murmurs undergo.

Sounds and murmurs. It is my experience that the earliest auscultatory evidence of mitral stenosis manifests itself in what seems like a prolongation of the first sound. I have seen individuals with only this evidence, or this plus a small pulse, in whom history counted for nothing, because they were applicants for life insurance and so could not be trusted to admit illness that might impair them as insurance risks, the issuance of whose policies I recommended to be postponed and whom I had opportunity to examine again at a subsequent time, when I found a clear, short, rumbling, auriculosystolic murmur. Sometimes the murmur can be brought on by having the patient exercise, or sometimes by his assuming the recumbent position. The effect of exercise or change of posture holds true as well in more manifest cases. It is not clear to me why a murmur is sometimes heard best with the patient in one position, sometimes in another. There is no constancy about it and explanations offered do not satisfactorily answer for all cases. The auriculosystolic murmur is oftener developed by changing to the recumbent position than by exercise. If this were constant we could accept the reasoning that the slowing of the heart in this position favors the appearance of the murmur, because diastole is lengthened, while making the heart beat more vigorously by exercising does little, because the auricle has comparatively little muscle and hence cannot be made to beat much more vigorously by the exercise.

Another early auscultatory manifestation of mitral stenosis, which later is found replaced by the more characteristic murmur, is a *laboring* first sound. It gives one the impression of straining, thus: . . . eh-h! It is as though, while one cannot clearly hear a murmur, one vaguely senses it nevertheless. I should compare it to the feeling one often has that he is being looked at, although the person looking at him is not in the field of clear vision, but somewhere in the peripheral field of the retina.

The particularly characteristic auscultatory phenomenon is a *crescendo* rumbling murmur, heard late in diastole, commonly called presystolic, but better named, because more descriptively, auriculosystolic. The murmur runs up to and terminates in a sharp snappy first heart sound. It is audible over a limited area at and about the apex. The second sound at the apex is usually relatively feeble, while in the pulmonic area it is accentuated. When there are no complications the second aortic sound is relatively weak, and this because of a weakened left ventricle. In fact, throughout the disease the quality of the second aortic sound is an index to the condition of the left ventricle. The *crescendo* murmur is dependent on the systole of the left auricle, squeezing the blood through a nar-

rowed mitral orifice with a pressure which increases from beginning to end of the systole. Hence, when late in the disease the auricle is paralyzed or fibrillating, the crescendo murmur disappears, as do the corresponding thrill and the evidence of auricular contraction in a jugular or electrocardiographic record.

The short, sharp, snappy, valvular quality of the first sound which follows close upon the crescendo murmur is dependent on the stiffening of the mitral flaps, and is quite characteristic.

When the mitral orifice is considerably narrowed and the pressure in the pulmonary circulation well raised, there is added another rumbling murmur, which, however, appears earlier in diastole, is not quite so loud, and is *decrescendo* in character. This murmur may run right up to and be continuous with the above described crescendo murmur, or it may be separated from the latter by a short interval, particularly when the heart action is slow. It does not depend on auricular contraction and therefore persists when the auricle is paralyzed or fibrillating, and when the short crescendo murmur has disappeared. It may be the only auscultatory evidence remaining to indicate the character of the valve lesion. It is produced during the early part of diastole by the forcible propulsion of blood from auricle to ventricle through a much narrowed passage, and because of the high pressure in the lungs and left auricle which the stenosis has brought about. It is decrescendo in character because as the blood escapes into the ventricle, the pressure on the auricular side of the valve progressively falls. This murmur also is limited in distribution to the area of the cardiac apex.

There may also be a soft blowing diastolic murmur, heard at the apex and a short distance above it on the left side of the sternum, sometimes as high as the third left space, but not in the aortic area, not over the sternum on the right side, and not replacing the aortic second sound. This murmur is most likely due to a relative incompetency of the semilunar cusps in the pulmonary artery, resulting from a dilatation of the right ventricle. It requires great care not to mistake this for evidence of aortic regurgitation, and this will be touched upon again, below.

The mitral systolic murmur from accompanying mitral regurgitation, and tricuspid systolic from secondary tricuspid dilatation, need no discussion. The cause of accentuation of the second pulmonic sound is equally clear.

DIAGNOSIS.

It is much commoner to fail to recognize mitral stenosis when present than to diagnosticate it when it is not present. I want again to emphasize the frequency and gravity of diagnosticating pulmonary tuberculosis instead of mitral stenosis.

As noted above, it may be difficult to differentiate from physical signs at the heart, mitral stenosis from aortic regurgitation. In both conditions there may be a blowing diastolic, a rumbling presystolic, and a blowing apical systolic murmur coexistent. In aortic regurgitation, however, the diastolic murmur is usually loudest in the second right interspace or over the middle of the sternum, propagated toward the apex, and replacing the second sound at the aortic area. The pulse of aortic regurgitation is large, the diastolic pressure is low, and the pulse pressure is increased; all conditions exactly the contrary of those which obtain in mitral stenosis. Capillary pulsation is also found in the former and not in the latter. Also, it has been determined by Hill and Rowland that in normal conditions, with soft arteries, the systolic blood pressure in the arm and leg of an individual in the horizontal position is the same or vary within a very few millimetres of mercury, while in cases of aortic regurgitation, with the patient in the same posture, the pressure in the lower extremity is, on the average, from forty to forty-five mm. higher. This finding is diagnostic of aortic regurgitation and may be determined with the usual blood pressure apparatus.

TREATMENT.

I shall mention only a few features in the treatment which apply particularly to cases of mitral stenosis, as distinguished from other valvular lesions.

In the early stages, these patients rarely need digitalis. When it seems that they need digitalis, then they need rest even more urgently, and it hence follows that patients with mitral stenosis should not be given digitalis, even in small doses, unless they are bedridden.

When digitalis is properly given, to a patient who needs it and that is staying in bed, it is safe to get the pulse down to a lower rate than in aortic lesions. This because a long diastole is needed to permit as much filling of the ventricle as is possible through the retarding auriculoventricular orifice. The predisposition of these patients to heart block should never be lost sight of, however, and functional heart block from digitalis avoided.

When the case has gone on to a stage of auricular fibrillation and the symptoms characteristic of that condition have appeared, the patient will of course be in bed, and digitalis must be administered in large doses.

When hydrothorax appears, it should be promptly reduced by aspiration. If a hydrothorax is permitted to persist too long, the lung remaining compressed over a considerable period, loses its elasticity and will not expand promptly enough nor to sufficient extent, on removal of the transudate. The consequence is, that the thorax refills very readily. On the other hand, many patients become accustomed to the disturbed anatomical conditions resulting from the hydrothorax, and suffer no dyspnea of any consequence, though the right chest may be half full of fluid. When one meets a patient in whom the thorax refills over and over again as soon as the chest is emptied, it is likely that the lung is quite inelastic or even has become adherent in a corner of the thoracic cavity. In such a case it is useless to continue aspirating the chest, unless it is clear that the patient suffers distress or added distress in direct consequence of the mechanical interference of the fluid.

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THE OLD METHOD OF TREATMENT OF SYPHILIS VERSUS THE NEW.*

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With the literature of the present day replete with the wonders of arsenotherapy of syphilis, we are but too prone to lose sight of the incontrovertible fact that even before these new potent remedies were at our disposal syphilis was a disease generally controllable in skillful hands. It is not my purpose in any way to cast reflections upon salvarsan, nor to deprecate the marvels I have seen it perform. Indeed, the greatest skeptics are now convinced of its high efficiency. In the following short paper it shall be my endeavor to compare the new with the older remedies and to outline, in the light of the comparison, what I deem the present rational treatment of syphilis.

The first reference which we find to mercury as a remedy for syphilis occurs in the immortal poem of Hieronymus Fracastor, to whom, indeed, we are indebted for the first accurate description of the clinical phases of syphilis, and who has given to us the name of the disease. In the prose translation of this fifteenth century masterpiece we find the following interesting paragraph:

At the beginning, mercury was employed associated with lard; later it was combined with the turpentine of Epirus and with the resin of the majestic birch. Certain physicians to-day combined it with horse fat or bear's grease, or bdellium, and with the juice of cedar; others with myrrh, with male incense, with mibium, and with burning sulphur. For my part, I prefer to alloy it with a mixture of black hellebore, orris root, galbanum, asafetida, and oil of mastic and oil of native sulphur. Patients, a truce to the disgust which may be caused by this remedy! For if it is disgusting, the disease is still more so. Besides, your cure is at this price. So, without hesitation, spread this mixture on your body and cover with it your entire skin, with the exception of the head and of the precordial region. Then, carefully wrap yourself in wool and tow; then get into bed, load yourself with bed covering, and thus await until a sweat bathes your limbs with an impure dew. Ten days in succession renew this treatment, for ten entire days you are to undergo this cruel trial whose beneficial effect will not cause you to wait.

Here one has the expounding of a treatment which, with slight modification, has come down to us through almost four centuries as an ideal method of combating syphilis. Besides recommending mercury as an inunction, Fracastor also recommended its use by method of fumigation or inhalation. This method, as you know, enjoyed excellent repute up to the middle of the last century.

It was but natural that early excellent results of mercurial treatment in this form should have been followed by its use internally in the form of pills and in combination as mercury salts. The internal administration of mercury has been perhaps the most commonly accepted form of treatment. It enjoyed a preference over all other methods of treatment in the last century, and indeed the foremost living syphilographer of to-day, Sir Jonathan Hutchinson, still maintains its supremacy over all other methods. While personally I do not believe that this is the ideal form of treatment, I acknowledge that, in careful hands and with due proper choice of the mercurial salt, the internal administration has many great advantages, particularly in infants and children. Here the time honored remedy hydrargyrum cum creta still enjoys well deserved supremacy. In the last twenty years two salts of mercury have been extensively employed in the internal administration, and I take this occasion to decry their use emphatically. These are, the biniodide and protoiodide. They readily control the symptoms of the disease, but I have yet to see the case permanently cured by these remedies, and a large proportion of the late recurrences which have come under my observation have been treated early in the disease by one of these two remedies. Of considerably greater value, however, may be mentioned, in passing, the tannate of mercury. In my experience this salt has proved second only to the bichloride. In this last salt, I believe, we have the most efficacious of all in the internal administration. At the outset permit me to say that the average practitioner does not use sufficiently large doses of this particular salt, customarily employing from 1/32 to 1/20 grain as a dose. The proper dose to effect permanent results with the bichloride should be from 1/10 to 1/5 grain.

In the last quarter of the nineteenth century mercury was employed in France in the form of injections; here, also, as in the internal administration, the various salts have been lauded one above the other. I may state that in the opinion of the most eminent syphilographers of the present day the insoluble salts are capable of controlling the disease with far greater ease, with less personal inconvenience to the patient, and with less care on the part of the physician than the soluble salts. In order that the soluble salts of mercury may be effective, they must be employed in injections daily. Employed thus, it must be admitted that they are very efficacious, but there are few patients who are able to stand the financial strain of such a course of treatment, not to mention the loss of time and the discomfort. In justification of my previous statement, I may say that next to those under the biniodide and protoiodide, the most frequent relapses have occurred in my experience when patients have been injected with the soluble salts, administered insufficiently.

I cannot pass from the subject of mercurial treatment without alluding to the inhalation method of treatment, which at certain spas still enjoys excellent repute. While good results are often obtained, the method does not commend itself on account of its impracticability. The method of inunction, however, differs but little from the inhalation method, for it has been conclusively shown by German investigators that the chief benefit derived from this method lies in the volatilization of the mercury and its subsequent absorption into the lungs, very little if any mercury being absorbed through the skin itself. The chief objection to this method lies in the fact that one cannot estimate the dose, and the undeniable fact that stomatitis is far more common than with other

*Read at the annual meeting of the First District Branch of the Medical Society of the State of New York, held at Poughkeepsie, October 4, 1912.

methods. However, it is still an efficient and at times the most practicable form of administration.

Within the past two years the medical and lay world has been startled by the introduction of a new and powerful remedy for syphilis, and, thanks to the untiring efforts of Professor Ehrlich and his colleagues, we have in salvarsan and the but lately evolved neosalvarsan the possible means if not of eradicating, at least of controlling syphilis with a single treatment. At first it was hoped that the remedy was entirely specific, that is, that its single application sufficed to eradicate the disease for all time. Beautiful in theory, the fact must be sadly admitted that such is not the case. The remedy readily controls the symptoms of the disease, but a single injection seldom if ever eradicates it. We now know that salvarsan, in order to effect a cure, must be repeated time after time, in order to effect that which only after many years yet to elapse we may term a cure.

METHODS OF ADMINISTRATION.

At first salvarsan was injected intramuscularly in neutral suspension, into the buttocks or the muscles of the back between the scapulæ; later in the form of oily emulsion, etc. On account of pain, sloughing, and necrosis, as well as painful infiltrations, remaining for months and years in some cases, this method is now practically abandoned. For the intravenous method we dissolve the contents of the ampoule (0.6 gramme) in 300 c. c. of freshly distilled, sterile warm water, add about twenty drops of fifteen per cent. solution of sodium hydroxide, the last drops of this solution being added very cautiously so as to obtain a clear solution of salvarsan without an excess of the alkali. Injection is made into an arm vein, either by means of a syringe or, as I prefer, directly from a burette. I strongly advise against the dissecting down on the vein, as the remaining scar will brand the patient as syphilitic for the rest of his days. Besides, for the future injections, the dissected vein will be useless. The method of administration of neosalvarsan differs in the following respects: It is given in less water, twenty c. c. of water for each 0.1 gramme of neosalvarsan (no sodium hydroxide to be added), and given in water of room temperature.

CASES REPORTS.

Case I. Ulcerated throat about five months, unable to take solid food, received eight intramuscular injections of salicylate of mercury, without appreciable improvement. On September 2, 1911, one intravenous injection of salvarsan; the following day was able to eat a hearty dinner and in less than one week there was no trace of lesions in the throat. Patient refused further treatment, believing that he was "cured." No recurrence of throat manifestations, though Wassermann examination, July 18, 1912, gave positive results.

Case II. Infection about four years, no lesions, Wassermann reaction positive, in spite of active mercurial treatment with injections and internal medication; salvarsan intravenously, six weeks after; Wassermann reaction, positive. After another course of mercurial injections and two more salvarsan injections, April 13th and May 17th, Wassermann examination, August 2nd, gave negative results.

Case III. Patient had gumma of the liver, Wassermann reaction positive. Salvarsan, September 13, 1911; within a week liver was reduced to its normal size, while before the injection enlargement could be seen at a distance. Patient was discharged from the hospital and could not be followed up.

Case IV. Infection about one year; treated with mercurial injections; Wassermann reaction positive, November 21, 1911, salvarsan and one course of mercurial injections. March 15th, Wassermann reaction positive; another salvarsan injection, March 31, 1912, and a mercurial course, Wassermann reaction September 20, 1912, positive. No lesions.

Case V. Infection about one year; had two courses of mercurial injections and some internal medication; Wassermann reaction, November 24, 1911, positive. Salvarsan, December 2, 1911; six week later, Wassermann reaction negative; since then two other Wassermann examinations showed negative result, almost nine months after salvarsan; no mercurial treatment since salvarsan was given.

Case VI. Initial lesion and roseola; was given three neosalvarsan injections in one week; two months later, Wassermann reaction negative; no other treatment; no lesions.[1]

Case VII. Patient with extensive papulotubercular eruption; Wassermann reaction positive. Salvarsan, July 17th; in less than a week roseola practically cleared up.

Case VIII. Infection about five years, last two years under my care; had four courses of mercurial injections; October 24, 1911, Wassermann reaction positive. After another course of mercurial injections Wassermann reaction became positive, March 26, 1912. On April 13th received salvarsan and three mercurial injections and some potassium iodide. Wassermann reaction, September 17th, positive; no lesions.

Case IX. Infection about three years, had four courses of mercurial injections; April 28, 1912, Wassermann reaction positive. May 10, 1912, neosalvarsan. No mercurial treatment after salvarsan. July 16, 1912, Wassermann reaction negative, October 29th.

Case X. Infection sixteen years (patient was an out of town case); about a year ago was seen with a papulosquamous patch below the knee; received one course of mercurial injections; lesions healed up; Wassermann reaction, April 23, 1912, positive. Salvarsan, August 13, 1912; no other treatment; Wassermann reaction, September 27, 1912, positive.

Knowing, then, gentlemen, what a potent remedy mercury has shown itself through the ages, and believing that in salvarsan we have perhaps a more potent remedy than mercury, the question arises, what is the proper method of treating any given case? The fresh case of syphilis, in an adult, I should treat thus: After demonstrating spirochætæ, by India ink, dark field, or any suitable stain, excision if possible of the primary sore, particularly before the eruptive stage, as this would remove an important focus of spirochætæ. If the excision is not practicable, inunctions of calomel ointment, thirty-three per cent., should be applied to the chancre. 2. Injection (intravenous) of three or four doses of salvarsan, if possible in rapid succession, and then, notwithstanding the absence of clinical symptoms and a possible negative Wassermann reaction, I would subject the patient to a vigorous course of mercury, let us say perhaps corresponding to one half the amount and time which would have been devoted to this form of treatment had salvarsan not been given at all.

For those having the advantages of large clinical and hospital facilities, and who can follow their patients for years, the treatment with salvarsan alone may suffice; but by the average general practitioner, who sees patients in a more transient way, the combination treatment should be used.

[1] A Wassermann examination on this patient, made October 15 1912, five months after the salvarsan injection, again showed negative results.

That is, the patients should be given the chance of cure which salvarsan holds out, but should not be denied the benefits which we know follow the use of mercury. Moreover, if for any reason it were incumbent upon the practitioner to choose between the two remedies—in the light of the experimental stage of salvarsan at the present day, and in justice to the time honored remedy, which has survived for four centuries—I believe mercury should be given the choice, at least for the present.

133 East Twenty-ninth Street.

REPORT OF THREE CASES OF EPIDEMIC SEPTIC SORE THROAT IN ONE FAMILY.*

By Murray B. Gordon, M. D.,
New York.

Case I. P. B., age sixteen months, well developed and nourished, was suddenly seized with convulsions on a train and hurried to the nearest drug store. Seen by Dr. J. Sarnoff, of Bath Beach, and sent by him to the Sunshine Sanatorium. The convulsions were checked by the doctor and the child fell into a well deserved sleep. On admission, the temperature was 103° F. (rectal); pulse, 150; respiration, 32. The next day I was called, as I was the family physician, and from then on I treated this patient conjointly with Doctor Sarnoff. The condition of the child had practically undergone little change, though the temperature had gone up to 105° F. (rectal). Pulse was 120; respirations, 36. Physical examination was negative except for a congested throat, which was evidenced subjectively by a difficulty in swallowing. The stools were green in color and loose, and led us to believe that we were dealing with a probable enteritis, inasmuch as the culture which had been taken from the throat was returned as negative regarding the diphtheria bacillus, and all other physical signs were negative. In the next two days the child did not improve under treatment directed to the enteritis and sore throat, the latter consisting of irrigations. As the right ear drum appeared congested, a paracentesis was performed, a small quantity of serum but no pus being obtained. Unfortunately this serum was not examined. The child in the meantime had been given quinine, acetphenetidin, and cinchona derivatives with no results. The temperature had been running from 103° to 101° F. and then from 105° to 101° F.; making two or three such excursions a day and the rise from 101° to 105° F. being sudden, while the fall was gradual. The pulse varied between 120 and 150, being stimulated by champagne; the respirations were about 30. A uranalysis at this time was negative except for some hyaline casts. The child was bright, sleeping a great part of the time, but sometimes awaking with a cry as if he were in pain. The glands of the neck were swollen, but the throat itself was negative. On October 1st the right side of the face swelled somewhat; there was also some tenderness over the right side of the abdomen. The child was much exhausted. The initial sore throat, enlarged cervical glands, the swelling of the right side of the face, with a congested ear drum on that side, appeared to point to a lateral sinus thrombosis, and accordingly a blood culture was made by the pathologist, Dr. S. Blatteis, who reported a sterile culture.

The child was becoming weaker and the temperature still made its excursions. Antipyretics, sponges, baths, were all useless in checking it. A stock vaccine of influenza bacillus was given, as some observers had reported cases of infantile influenza which ran courses similar to this. A lumbar puncture showed an increased amount of lymphocytes, with an increased globulin reaction, but no chemical or bacteriological changes. The fluid was clear, and it flowed through the cannula without any increased pressure. In the opinion of Doctor Blatteis, it showed a meningismus, but not a meningitis. By this time the baby was very restless, throwing itself from side to side. The stools, which had become normal, now showed a returning enteritis, with a tendency to the formation of gas, and this interfered with the respirations, which became labored and rapid. At times the extremities were cyanosed. A uranalysis at this time showed granular, hyaline casts, white blood cells, and albumin. A bronchopneumonia then set in and later laryngeal stenosis occurred. Another culture from the throat for diphtheria bacillus was taken, and found negative; but ten thousand units diphtheria antitoxine were given as an empirical measure. The stenosis became so marked that intubation was necessary. The child died on October 10, 1912. No autopsy was made.

Case II. J. B., age three and a half years; a brother of P. B., family history, negative. Past personal history: Full term child, difficult labor, forceps delivery. Had an hypertrophied tongue, which had somewhat diminished in size by the eleventh month. Weight at birth, nine pounds; first sat up at five and one half months; crawled at nine months; walked at fourteen months; teeth appeared normally; spoke at one year; speech thickened on account of the hypertrophy of tongue. Was put on thyroid medication at eighteen months, one third grain three times a day; the dose being progressively increased as the child grew older; was taking three grains a day consecutively, with intermission periods of ten days. The tongue was practically normal, the speech was not quite perfect, but there were no symptoms of delayed or impaired mentality; on the contrary he was a precocious child. On October 6, 1912, while the first child was still in the sanatorium, he took sick with fever, sore throat, and enlarged cervical glands on both sides; no membrane being present on the tonsils or pharynx. This condition persisted until the 11th, when a slight bronchitis developed. On the 16th he was seized with chills which lasted about an hour, his temperature jumping up to 105° F. (rectal) by the next day. On examination, a patchy pneumonia was found, the tonsils were still hypertrophied and the glands in the neck enlarged. The lung condition subsided by the 28th, but the throat condition remained the same, the temperature running between 100° and 101° F. He had been off the thyroid medication, and, thinking that perhaps we had a case of acute follicular tonsillitis of rheumatic origin, I decided to resume the gland treatment, and accordingly put him on three grains of thyroid a day; giving salicylates at the same time. The temperature remained down for two days, when there was a sudden rise to 105° F. in the morning, with a gradual decline to 98° F. by evening. A culture was taken from the throat and examined for diphtheria bacillus with negative results. The sudden change in the temperature curve caused me to suspect a condition similar to that in the first child, and accordingly a blood culture was taken. Even though no diphtheria bacillus were found, he was given an injection of 3,000 units of antitoxine. Separate cultures were taken at the same time from each tonsil and from the fauces. Doctor Blatteis reported that the blood culture was negative, but that a colony of pure streptococci was obtained from the left tonsil, while the cultures from the right tonsil and fauces showed streptococci and some other unknown organism. He was instructed to prepare an autogenous vaccine, but in the meantime, on November 2nd, I gave the child an injection of stock streptococcus vaccine, twenty-five million. An erythematous rash over the entire body appeared two days after the injection of the diphtheria antitoxine, and prior to the administration of the vaccine; lasting for one day. The temperature became subnormal the same evening, and the next afternoon there were chills and a subsequent rise to 104.6° F. The next day, November 4th, there was an interesting occurrence. The temperature had been slightly lower for the day but, after the painting of the tonsils with pure tincture of iodine there was a sudden rise to 104.6° F., which was accompanied by a filling up of the cervical glands. This subsided by evening, the temperature dropping to 96.4° F. I attributed the phenomena to the fact that the child was a thyroid baby and that the local application of iodine produced a sudden increase in the iodine content of an already enlarged thyroid gland, a condition which is common in these children in tonsillar affections. On November 5th, three days after the injection of the stock vaccine, the temperature was normal during the day and subnormal in the evening, the glands were somewhat smaller and soft-

*Read before the New Utrecht Medical Society, January 7, 1913.

er, and the patient was cheerful and bright. During the day, however, three blood clots were passed from the bowels. The question of a streptococcic infection of the bowels, with a possible formation of a membrane was uppermost in my mind, but this was probably not the case, for the condition lasted but one day. It was most likely a hemorrhagic colitis. On the next day, fifteen minims of an autogenous vaccine, containing 100 million bacilli, was administered, and was followed by a rise in temperature to 101.4° F. The general and local condition improved, no medication being given except an alkaline gargle. On November 10th I put the child on elixir of iron, quinine, and strychnine, and on December 1st this was changed to syrup of ferrous iodide, five minims every four hours.

Case III. C. B., age five and one half years, brother of the other two patients. Past personal history negative, except for an attack of possible anterior poliomyelitis last year which was characterized by high temperature, vomiting, diarrhea, prostration, delirium, and pains in the limbs. There was no resulting paralysis. His brother, J. B., it is interesting to note, was similarly affected at the same time. On October 11, 1912, he was taken sick with acute tonsillitis, the tonsils being markedly hypertrophied; cervical glands enlarged; temperature 103° F. Was treated with tincture of ferric chloride internally and alkaline gargles. Acute condition subsided in two days, the tonsils remaining markedly hypertrophied and the enlargement of the cervical glands persisting; temperature 99° F. On October 30th he was given 1,000 units diphtheria antitoxine as a prophylactic, his brother being given 3,000. He was bright, playful, and energetic. After the streptococci were found in his brother's throat, it was thought advisable to make cultures from his also. This was done and the same organisms were found. On November 5th he was given a dose of ten million streptococcus vaccine, which was followed by a slight rise of temperature, with a subsequent drop to subnormal. On the 8th the glands in the neck were still found enlarged, especially on the left side; the tonsils were very much hypertrophied with a thin translucent membrane on each tonsil. He also was placed on elixir of iron, quinine, and strychnine. The enlargement of the glands still persisting, I decided to have an autogenous vaccine made, in the hope that this would reduce them. On November 16th cultures were made from both tonsils and fauces, the organisms found being streptococci of a lessened virulency. After cultivating three successive growths, Dr. Blatteis was finally able to make an autogenous vaccine 1 c. c. of which, containing 100 million streptococci, was given on the 24th In three days the glands were appreciably smaller, though the tonsils were still very much hypertrophied. Both this and the preceding patient are now in the best of condition.

A careful consideration of these three cases cannot but make one think that the last two were analagous to the first. The profound sepsis present in the first case showed conclusively that we were dealing with a highly virulent organism. Diphtheria can be ruled out, for at no stage of the disease were there any diphtheritic symptoms except possibly when the baby was moribund and a laryngeal stenosis developed. From the light shed by the later cases, I would unhesitatingly say that the stenosis was caused by a streptococcic membrane, and not a diphtheritic. Several cultures taken for diphtheria were negative. No pus was found on puncturing the ear drums, and I doubt if any streptococci would have been found in the serum obtained by the paracentesis. The throat was clean, that is, macroscopically clean. Local cultures may have shown the presence of streptococci, as in the other two brothers, for though a blood culture in the second case was negative, still organisms were found locally which were virulent enough to produce general havoc.

The three cases being, then, streptococcic infections, the almost simultaneous appearance forces us to consider them as epidemic. If epidemic, where was the source? If through the milk, water, or any other similar supply, why were not others in the neighborhood, the Bedford section of Brooklyn, affected? The family had been using the same milk supply for the past two years, but changed, on my advice, after the outbreak of the cases. The Commission on Milk Standards of the New York Milk Committee, in its last report, states that there have been several epidemics of this disease (septic sore throat, as it terms it) in the past few years which were traced to the milk supply. It recommends that this be regarded as a reportable communicable disease, and tabulated and recorded as such by the health authorities. The infection of the milk may be due to either udder infection of the cow or else contact with infected persons.

In conclusion, I wish to emphasize the importance of taking cultures from every suspicious case of sore throat, and not to be satisfied by a negative report as to the diphtheria bacillus. A streptococcic infection is a more dangerous foe in that we are apt not to awake to the seriousness of the case until most of the damage has been done. Blood cultures are good in their way, but when the bacteria have already entered the blood stream it is probably too late; early cultures from the fauces and both tonsils separately will tell us definitely where the site of the trouble is, and if conditions are such that autogenous vaccines cannot be made for financial reasons, recourse can be had to stock vaccines which are being sold at prices within the reach of everyone. Local boards of health should provide the public with the same precautions and treatment as in diphtheria.

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THE CARE AND AFTERCARE OF THE CONSUMPTIVE.

*With Special Reference to New York City.**

By Bruno S. Horowicz, M. D.,
New York,
Chief of the Tuberculosis Clinic of the Good Samaritan Dispensary.

A study of the reports of the Department of Health of the City of New York shows that there were about thirty-five reported cases of pulmonary tuberculosis in 10,000 of the population in 1900, and about forty-four in 10,000 in 1912, or an increase of over twenty-six per cent. The deaths in 10,000 of the population were 23.7 in 1900, and 16.6 in 1912, a decrease of thirty per cent. However, the increase in the morbidity of tuberculosis is probably more apparent than real. While even now many physicians are sadly deficient in their sense of duty toward the community, and delay their reports of tuberculosis cases until they are nearly ready to sign the death certificates, the various antituberculosis agencies are constantly on the lookout for cases, and more of them are reported than formerly. The falling off in the death rate, however, is so marked as to suggest the presence of further causes. It is undoubtedly due to the vigorous antituberculosis campaign waged

*Read before the New York Physicians' Association, February 27, 1913.

within the last decade. If the decrease were to continue at the same rate, tuberculosis would probably soon cease to be a disease of the masses But I believe that this apparent decrease will not continue long, and that it will soon reach its limit, because, as a matter of fact, the deaths are only postponed a few years. The lives of thousands of patients may have been prolonged as a result of proper care and treatment, and of the educational propaganda, but the number of permanent cures is small, except among those patients whose lesion when detected was so slight that it would have been practically impossible to prove its existence beyond a doubt. It has been estimated by Doctor Knopf that the fight against tuberculosis costs the City of New York $2,000,000 annually. In spite of this enormous outlay of money, as well as the vast amount of labor and energy expended by physicians, nurses, social workers, and others, the results obtained are by no means proportionate. Unquestionably much good has been accomplished, but a great deal more remains to be done.

Under the present measures adopted for the supervision of tuberculosis in New York city, registration at the Department of Health of all cases of tuberculosis is compulsory. Private physicians' cases are not interfered with by the health department, provided that the physician holds himself responsible for the observance of the necessary sanitary precautions. Practically all other tuberculosis cases are taken care of by the clinics belonging to the Association of Tuberculosis Clinics, which includes in its membership all the health department clinics. Comparatively few cases are treated by dispensaries which are not in the association. Each clinic has its allotted district and treats only residents of that district.

Not very long ago a block of model tenements was erected in New York by a well known philanthropist who had recognized the fact that the hotbed of tuberculosis was the overcrowded, insanitary tenement. The intention was to offer a dwelling with all modern conveniences and a maximum amount of air and sunlight to families having a member who was ill with tuberculosis, but not ill enough to enter an institution, or to let such dwelling to one who had returned from a sanatorium. The rents in these model tenements are low when the equipment and conveniences are considered, but unfortunately they are too high for most families which they were intended to benefit. It is earnestly hoped that this charity will be carried a little further, even if such houses should have to be conducted at a loss.

Four ferry boats, whose use in the transportation service has been abandoned, are employed as day camps for consumptives and as schools for tuberculous children. Children whose sputum contains tubercle bacilli are excluded from public school attendance by the Department of Health, and are referred to the day camps. Tuberculous children whose sputum is free from tubercle bacilli may attend public school, or, if desired, may be sent to the day camps. One of the boats has sleeping accommodations for patients who work during the day or are on waiting lists for sanatoriums. The Vanderbilt Clinic has a day camp situated on the roof of the clinic building. The New York Nose, Throat, and Lung Hospital has a tuberculosis night camp.

Patients attending clinics are visited by district nurses who look after the home conditions and recommend necessary changes. Auxiliaries to the various clinics, as well as the large charitable organizations, such as the Charity Organization Society, the Association for the Improvement of the Condition of the Poor, and the United Hebrew Charities, look after the wants of needy patients and their families. Patients not attending clinics are kept under the supervision of Health Department district nurses. Those whose presence at home constitutes a menace to the health of their families, and who are unwilling to enter hospitals, are removed by the Health Department to Riverside Hospital and detained there until conditions improve. Homeless patients are likewise kept there.

Tuberculous patients applying at clinics, or coming to the notice of the Health Department through complaints or requests for diagnosis, are attended to in the following manner: Incipient cases are referred to out of town sanatoriums immediately after the diagnosis has been made. Moderately advanced cases are sent, according to the extent of the lesion, to some of the sanatoriums or hospitals for tuberculosis, or, if for certain reasons patients are unable to leave the city, they are treated at tuberculosis clinics or day camps. Advanced cases are sent, whenever practicable, to hospitals.

There are several sanatoriums outside of the city. The New York State Hospital for Incipient Tuberculosis at Ray Brook, Essex County, New York, is intended for incipient cases only, and can accommodate two hundred and sixty patients. The New York city Sanatorium at Otisville, Orange County, New York, is for incipient and moderately advanced cases. It has a capacity of five hundred patients. Applicants must be residents of New York City, and, with certain exceptions, in the case of women and minors, aliens are not accepted while there are citizens on the waiting list. The Montefiore Country Home at Bedford Hills, New York, provides for incipient and early second stage cases. Its capacity is one hundred and eighty. Preference is given to Hebrews. In Stony Wold Sanatorium, Lake Kushaqua, N. Y., only incipient cases are admitted. It has a capacity of one hundred and six, of which twenty-nine beds are available for free patients. Adirondack Cottage Sanatorium, Trudeau, N. Y., has a capacity of one hundred. Cases must be strictly incipient; and both male and female patients are taken. Charge, $7.00 a week; for needy patients only. At Loomis Sanatorium, Liberty, N. Y., early acceptable cases are cared for in the annex for $5.00 a week. The Preventorium at Farmingdale, N. J., accepts children predisposed to tuberculosis, but not actually tuberculous. At present, with some exceptions, only citizens are admitted. Applicants must come from a home in which they have been exposed to infection.

There are eleven hospitals for tuberculosis in New York city, with a total capacity of about 3,500 beds, including the new Sea View hospital on Staten Island. Admission to the sanatoriums and

city hospitals, with the exception of the Montefiore Home, Loomis Sanatorium, Stony Wold, and the Adirondack Cottage Sanatorium, is obtained through the Hospital Admission Bureau, conducted jointly by the Departments of Charities, Health, and Bellevue and Allied Hospitals. If, after proper investigation and examination, an applicant is rejected because he is not suitable for the institution for which application has been made, he is advised to enter one where he is acceptable. A patient can be referred to the Hospital Admission Bureau direct, or through the tuberculosis clinic of the district in which he lives. It is, as a rule, easy to have an incipient case admitted to a sanatorium, although occasionally the waiting lists are long. The difficulty arises when it is desired to dispose of a moderately advanced case. The patient is up and around and feels fairly well, but, because of the extent of his lesion, he is not suitable for a sanatorium. He refuses, however, to enter a hospital, stating, not without reason, that his is not a hospital case, and that a stay in the hospital will not benefit him. He may say that what he needs is country air. It is quite obvious that the moderately advanced and advanced cases are the real sources of infection, and if left at home make it practically impossible to eradicate the disease.

As previously stated, the Department of Health removes tuberculous cases by force if it can be shown that they are a menace to the health of those about them. But what consumptive is harmless in the squalid surroundings of a congested tenement in which misfortune and poverty have placed him? How then can we induce these patients to leave the home and to enter an institution? There are several matters to be considered. In the first place, we ought to make these institutions so attractive as to obviate any necessity for argument or persuasion on the part of the medical adviser. If we can tell the patient that he will be admitted to an out of town sanatorium, holding out the hope or possibility of a cure, argument will be necessary in but few cases. In addition, adequate provision for the support of the patient's family should be made during his absence from home. The principal need, therefore, is a sufficient number of sanatorium beds to accommodate all tuberculous patients who can be induced to take advantage of them. Again, only patients in the last stages of the disease should be admitted to hospitals within the city. At the present time a patient, after admission to a sanatorium, is kept there from three to twelve months; in very exceptional cases a little longer. This may be sufficient in a small percentage of cases, particularly those whose lesion is extremely slight and whose sputum was free from tubercle bacilli when entering the sanatorium; but rarely will it be of lasting benefit in well defined cases of tuberculosis with demonstrable lesions and positive sputum. Experience has shown us over and over again, that a great many of these cases when returned to the city as arrested, or even as apparently cured, will suffer a relapse sooner or later. To get more permanent results, patients should be kept in sanatoriums much longer than at present. Their stay should be determined by their physical condition, and those whose lesions are merely arrested should not be discharged and told that they will probably get along well enough in the city, for it is reasonably certain that in the old environment their trouble will reappear and they will again become active sources of infection. Patients ought to be kept in sanatoriums until they can be pronounced apparently cured. Then they should be placed in industrial or farm colonies, which can be conducted very economically, and possibly even made self supporting. Such a colony has been established in the vicinity of Baltimore, and is reported to be quite successful. After a prolonged stay in one of these colonies, always under medical supervision, they may be discharged practically assured that they are cured, and in a condition to resume their vocation. Perhaps they may have, in the meantime, acquired a liking for farm work or gardening, and may be willing to devote themselves to it in the future rather than to return to commercial or manufacturing pursuits in the city.

Patients who do not improve in sanatoriums, or who grow worse, should be persuaded to enter institutions of an intermediary nature, such as sanatorium hospitals, also situated in the country. In these institutions the rest cure, rather than the work cure, should prevail. If the patients should continue to grow worse and the prognosis becomes hopeless, they should be transferred to hospitals and under no circumstances be allowed to return home, since at this stage they are most dangerous from the point of view of infection. The city hospitals should be limited to the admission of far advanced cases only. Graded institutions located in the country are, to my mind, the *sine qua non*, the essential weapon in our fight against tuberculosis. It is a plan, which however difficult of realization it may seem, would prove of lasting benefit to the entire community.

The methods here outlined are most urgently submitted for the consideration of all those organizations and individuals who have awakened to the danger, and stand ready to stamp out the scourge of tuberculosis.

230 West 112th Street.

ACUTE INTESTINAL OBSTRUCTION.*

By Richard A. Barr, M. D.,
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The term intestinal obstruction is a somewhat unfortunate selection for the purpose it serves, since it emphasizes and magnifies the importance of a symptom and tends to distract our attention from the pathology. However serious occlusion of the lumen of the bowel may be, its deleterious effect upon the patient is slowly developed, compared to the rapidly fatal tendency of gangrene, due to strangulation of a coil of intestine. There are many conditions that interefere with the passage

*Read before the Middle Tennessee Medical Association at Shelbyville, Tenn., November 21, 1912.

of the bowel contents along its lumen, and the difficulty of differentiating between these has, more than anything else, led to the general use of the expressions "locked bowels" and "intestinal obstruction." The selection of an obvious symptom for descriptive diagnosis makes the latter a matter of superlative ease, but does scant justice to the abdominal pathology, which may vary from an evanescent paresis to a gangrenous process, involving, possibly, the major portion of the intestine, large and small.

The diagnosis of the special condition leading to intestinal obstruction is one of unusual difficulty, and at the same time one of special interest and importance to the surgeon. To him it is of value to determine whether the failure of bowel action is due to some interference with the dynamics of the bowels (central disturbance of nerve function, handling of the peritoneum during operation, toxemia of extraabdominal origin, toxemia from intraabdominal infection, etc.), or whether, on the other hand, it is due to some one of the many causes of mechanical occlusion of the bowel lumen. It is only by making this differentiation that he can determine the propriety of surgical intervention in the given case and decide the proper time for its adoption. Until this differentiation is made, it is of prime importance that nothing be done in the way of treatment that may cause harmful results in any of the many conditions that may prove to be the cause of the obstruction. In this connections, I want to emphasize the fact that locking of the bowel, which can be unlocked with a purgative, does not threaten a patient's life. Bowels that are mechanically locked cannot be opened with any such key.

In both abdominal infections and mechanical obstructions, the administration of purgatives by the mouth is usually injurious, so certainly in the last condition that their use deserves to be classed as malpractice. Is it possible to imagine a more atrocious procedure than the administration of a large dose of Epsom salts, for instance, to determine whether locked bowels are due to septic paresis, or to mechanical occlusion? Such a test is not only fallacious, it is almost certain to do injury, no matter which condition is present. Should the case be one of peritonitis, with unprotected primary focus, peristaltic movement will certainly disseminate infection, while in mechanical occlusion it will increase the damage being done to the involved and proximal gut. In both instances, the pouring out of fluid into the lumen of the bowel increases the activity of the intestinal bacteria. Fortunately in either condition purgatives administered by the mouth are usually promptly rejected by the stomach, and the patient is afforded protection in this way. Unbelievable as it may seem, the purgative test for differentiation is still used. I have seen it used in this year, 1912, and probably some of you have. A much more common practice at the present time is the careless use of purgatives, without determining their possible injurious effect. Let us get impressed upon our minds that locking of the bowels is merely a symptom. When the symptom is due to an abdominal infection or to a mechanical occlusion of the bowels, purgatives are contraindicated before operation, and just as much so in one condition as in the other.

It is rare indeed that a diagnosis of obstruction cannot be narrowed down to these two conditions. An occasional pneumonia, or other extraabdominal condition may mislead us, and such a mistake may be beyond any effort on the part of any but the most expert to prevent, even by careful examination. It is, however, within the reach of any man's intelligence to learn the danger of purgation, and yet how seldom do we see either paralytic or mechanical ileus that has not been treated in that way. The diagnosis has usually been made with sufficient accuracy to exclude the thought of such a plan. In this one particular our diagnostic ability seems to have outrun our therapeutic intelligence. Patients with any type of acute ileus are seldom saved, either before or after operation, by purgatives. It would be better for purgatives never to be given at all in this condition than for them to be used with any carelessness. Even when they are permissible, there is no proof that they are particularly effective. Since they are ever of doubtful value, and may do great harm, we should absolutely eschew them in the preoperative stage of all acute conditions with locking of the bowels.

As already stated, leaving rare conditions aside, the question that confronts us first, when we meet a case of ileus, is whether it is mechanical or due to peritonitis, and if the former, whether there is strangulation or other progressive destructive process going on in the involved section of the gut. Since peritonitis is a secondary process, the ideal procedure is to make a diagnosis of the primary condition before the infection has spread to the peritoneum. To attempt here a differentiation between ileus and the other possible individual causes of peritonitis would cover too wide a range, but it may be said in a general way that severe abdominal pain, with an absence of tenderness and rigidity, is almost diagnostic of acute mechanical ileus in the early stages. A continued disproportion between the pain, vomiting, meteorism, and shock on one hand, and tenderness and rigidity on the other, points still to mechanical obstruction. A low temperature and a low leucocyte count also suggest mechanical obstruction. A wavelike exacerbation of the pain is more common and more marked in mechanical ileus than in any other abdominal disease. It is very desirable to diagnosticate obstructive lesions on other symptoms, before locking of the bowel becomes evident. The development of this symptom should not be waited for, and, above all, no effort should be made to develop it by purgation. Peritonitis should be prevented by early operation on the primary focus of infection, and mechanical occlusion of the bowel should be relieved before obstruction is manifest.

However, in spite of all care and skill, we shall have the development of both paralytic and mechanical ileus plainly marked by obstinate and even absolute stoppage of gas and feces. Each condition tends to produce the other, and ultimately they are prone to be associated, no matter which is pri-

mary. Once there is the development of obstruction, it is only the history that can be of any special value in helping us determine whether or not there was primary mechanical ileus. Paralytic obstruction excludes peristalsis by its very name, while mechanical obstruction stimulates it, and here we have our only valuable differential point. Wavelike paroxysms of cramping pain strongly suggest the presence of peristalsis, while "patterns," in other words, visible contracting coils of gut, prove its presence. So long as the neuromuscular apparatus of the bowel is sufficiently sound to produce this symptom, we have a basis for differentiation. When peritoneal sepsis supervenes, and peristalsis subsides, we are thrown back on the history for evidence of early mechanical occlusion. When the occlusion develops upon a peritonitis, the cramping pain of peristalsis may never be present at any time. Strangulation even may occur under such conditions, without any evidence beyond the absolute obstruction to gas, as well as feces; somewhat unreliable evidence at best. Here we have one of the most difficult of surgical diagnostic problems—that is, the detection of a mechanical obstruction developing upon a paralytic one. It is more than difficult, in many cases it is impossible, but fortunately a mechanical occlusion that is also a strangulating process, developing upon a peritoneal infection, is rare. Mechanical occlusion, without strangulation, and without violent peristaltic effort, adds little to the gravity of a severe peritoneal infection, and, in my opinion, calls for little variation in treatment.

On the second question, that is, whether or not we have a progressively destructive process at the site of a mechanical obstruction, there is not much outside of clinical evidence sufficiently clear to be comforting. Conditions that cause chronic mechanical obstruction, culminating later in acute obstruction, can usually be counted on as not being progressively destructive. Postoperative mechanical obstruction that comes on within a few days, or even within a few weeks, after operation, is usually due to kinking or agglutination, and is not a strangulating process. There are exceptions enough in both classes to make it hazardous to count out the danger of gangrene or perforation, though Ellsberg figures that only fifteen per cent. of acute obstructions will be attended by a gangrenous process, or one that threatens to become so, and two thirds of these are either volvulus or intussusception, while the latter of these will, in most cases, be capable of clinical recognition. So far as symptoms are concerned, shock, with the symptoms given above, suggests strangulation, as does also intense pain, if it is continued between and independent of the peristaltic waves.

Treatment. The prevention of ileus has already been discussed in a minor way, and what has been said must suffice, as we have not time to go into the technical details to be followed at abdominal operations, where we have our evident field for prophylaxis. The handling of ileus, until the question of its surgical nature has been established or disestablished (and in the former case, while waiting for operation) is simple: Absolute withdrawal of food, water, and medication by the mouth, with the use of gastric lavage; the administration of water by the bowel, if it can be done satisfactorily, or by hypodermoclysis, if necessary; water must be given and retained; enemata to empty the lower bowel and encourage the ascape of gas and other bowel contents would be desirable but for the probable interference with the use of water; enough morphine to subdue pain, quiet the nerves, and put the bowels at rest. Many surgeons object to morphine, but I believe it absolutely indicated, before operation in mechanical ileus, to put a stop to violent peristalsis, and I am sure that the most violent opponent of opium would prefer a narcotized patient to the victim of castor oil or compound cathartic pills.

Taking up the surgical treatment of ileus, I will not consider the surgery of peritonitis, for it is safe to assume that the handling of peritonitis along the lines popularized by Murphy meets with the approval of the majority of internists and surgeons. And yet, I will call your attention to the fact that in this type of ileus practically nothing is done at operation to empty the bowel of its contents. Very rarely is enterotomy, and more rarely still, enterostomy, done. From this we may assume that the absorption of poison from the lumen of the gut is considered a negligible danger. This is rather strange, in view of the fact that in mechanical ileus such stress is laid upon the importance of emptying the distended proximal bowel, whether the obstruction itself is relieved or not. Hartwell and Hoguet (*American Journal of the Medical Sciences,* cxliii, p. 357) in experimental work on high intestinal obstruction have concluded that in this condition there is little danger of the absorption of newly formed poisonous products, or the abnormal absorption of poisons ordinarily present, until there have occurred pathological changes in the mucous membrane of the bowel. The experiments of Roger and Garnier, quoted by the writers mentioned above, have apparently proved that the stagnation of bacteria and their toxines cuts no special figure in the production of the symptoms of obstruction. In view of these experiments, it is very possible that we have overestimated the danger of absorption of toxic material from the flaccid bowel below an obstruction, after the latter has been relieved, and the contents of the proximal bowel allowed to enter the flaccid area. Counting out the bacteremia, the essential difference between a paralytic and a mechanical obstruction lies in the damage done to the gut in the latter condition. This damage is done in two ways, by strangulation and peristalsis, and the handling of these two factors creates the essential difference in treatment of the two types.

The disadvantages of surgery done for the permanent relief of mechanical obstruction, in the face of acute symptoms, are too well known to need amplification here. Suffice it to say that they are so great as to exclude its use except to prevent an impending destructive process in the bowel, or to remedy destruction already accomplished. It is desirable to get rid, if possible, of all acute symptoms, before even the simplest surgery is done. We find

then that the surgery of both paralytic and acute mechanical obstruction is reduced to a minimum. The removal of foci of infection in one condition, and of destructive processes in the other is the limit, so to speak.

Laying aside these features of the two conditions temporarily, what about the gut itself urgently demands attention? In both paralytic and mechanical obstruction we have a bowel full of poisonous material, and in unrelieved mechanical obstruction we have to guard against injurious peristalsis. Gastric lavage and purgatives by mouth, or purgative enemata are considered sufficient to take care of the accumulated poison of peritonitis, for instance. Enterotomy and enterostomy are seldom used. But when mechanical occlusion is present, enterotomy and enterostomy alone, at some, you might say any, point proximal to the obstruction becomes the sheet anchor, not only to empty the bowel and check injurious peristalsis, but, as believed by some, to offer opportunity to strangulated coils of gut to escape from ensnaring bands. In some hands this procedure brings the moribund back to life with remarkable uniformity of action. Other operators are not so happy in their results, and consequently not so certain of its theoretical and practical advantages. To my mind, the statement of Treves, quoted and denounced by Ellsberg, that it is "extreme, irrational, and blindly advised," appeals as being not far from the mark. It certainly is blindly advised when a destructive process is left uncared for. Let us assume for a moment that we have a mechanical occlusion, due to adhesions or some similar condition, without any strangulation of bowel circulation. If sufficient opium is given to not only prevent violent, irregular peristalsis, but to inhibit all bowel movement, on what basis can we assume, except in very high obstructions, that our patient is in any immediate danger? If neither gangrene nor perforation is imminent at the site of obstruction, is our patient in any worse fix from an opium paralysis of the gut than he would be from septic paralysis? If gastric lavage will tide the septic case over until the bowels move, why will it not do the same for the narcotized patient? It will, and under lavage and opium, circulatory disturbances in the occluded and proximal gut will be readjusted, and, as the gut begins to wake up, it is more than likely to find the mechanical obstruction relieved.

If the occlusion is permanent an enterostomy is of course demanded, unless the patient's condition justifies surgery for permanent relief of the obstruction. Enterostomy is a nasty affair to handle during what might be called its eruption period, and, besides this, the operation may be performed so high in the gut, when done without careful selection of the coil to be opened, that starvation of the patient results. Its very unpleasantness is sufficient argument against its use except where it has distinct advantage over any other plan of procedure. I must confess to a suspicion that enterostomy has been given the cerdit, of late years, of raising almost too many people from the dead, but, granting everything claimed for it, it seems very reasonable to believe that patients, with such a pathological condition present that they can be brought back to life by bowel drainage, might have been saved, by intelligent treatment, from getting into any such shape. Go ahead and use enterostomy on desperate cases of obstruction from any cause. Let us grant that it is not "extreme" or "irrational," though it is blindly applied under such conditions; but, where the patient's condition at all justifies it, let us make some slight search for the obstructed gut, unless we have extensive adhesions. Attempts to unravel adhesions in the presence of acute obstruction are fatal, and I do not think are ever justified. Let us try to prevent our patients from getting to the stage where enterostomy is indicated, and let us not get too much obsessed with the idea that it is a surgical procedure indicated for the treatment of acute mechanical bowel obstructions in general.

It is probable that you have been able to follow my line of argument with great difficulty, if at all, for this paper lacks consecutiveness; but the few points I wish to emphasize can be briefly stated in conclusion.

1. Digestive disturbances, with colic, following abdominal operations, should be treated with opiates and not by purgatives.

2. A suspected mechanical obstruction should never be treated or tested by purgatives by the mouth.

3. Under such circumstances the painful peristalsis should be quieted with opiates. Attempts to move the bowel should be made only with enemata.

4. Patients with suspected strangulation of the bowel, or with mechanical obstruction of any type that does not yield promptly to opiates, gastric lavage, purgative enemata, and hypodermoclysis should be treated by section.

5. In all patients, except desperate cases that are operated on a search should be made for the obstruction, provided no adhesions are present. This search should, if possible, start with the cecum, and should proceed up or down the gut, as determined by the flaccid or distended state of the cecum.

6. If the obstruction is not located after a brief search, enterostomy should be done at the lowest point in the distended gut that is practicable. This should be made by fastening in a rubber tube with sutures, after the manner of a Kader or Senn gastrostomy.

7. There is only one technical point that I wish to present. It concerns a plan I have used only once, myself, but it appeals to me as a good one. When resection is done for damaged gut, and anastomosis is considered justifiable, use the lateral suture method, and establish gut drainage by fixing the proximal end of the gut in the operating wound, or in a stab wound, after fixing a tube in it by two or three successive purse strings of catgut.

By this means the proximal bowel is given an outlet for its accumulations, and the suture is absolutely relieved from stress and strain due to distention of the gut. Spontaneous closure of the fistula is practically assured, since a portion of it is lined with peritoneum.

THE SUCCESSFUL TREATMENT OF ATROPHIC RHINITIS AND OZENA;

A New Remedy.

By Louis Jacobs, M. D.,
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In the therapeusis of chronic atrophic rhinitis and ozena, the remedial measures that have been employed are legionary. Each in turn has been advocated as a cure for the relief of this distressing condition and has been found wanting. The author, however, ventures to offer another that seems a rational and efficient remedy, judging from the results obtained.

Inasmuch as this report is a preliminary one, the consideration of the various theories of etiology and pathology of this disease will not be discussed, nor will reference be made to the general constitutional treatment and local surgical measures, either intranasal or upon the accessory sinuses, with a view toward removing causative factors. In the vast majority of instances the treatment has been local, and this includes the topical application of preparations of such drugs as iodine and ichthyol, sprays of watery and oily solutions, insufflations of powders, tamponage, injections, and electrical stimulation. Relief, if any, has been but for short periods only.

In the fall of 1911, in the course of treatment of a simple ulcer of the septum with scarlet red ointment, there was noted by the writer an intense reactionary inflammation in the normal mucous membrane. This fact suggested the use of the ointment as a stimulant to the atrophic mucous membrane, as found in chronic atrophic rhinitis. In the early cases treated the ointment was used, but it proved unsatisfactory because of the difficulty of application and its inability to adhere to the mucous membrane. Later, a suspension in white petrolatum, five per cent. strength, was used. This was found to adhere to the mucous membrane, but it did not remain in the nose for a reasonable time. Suspensions in either mucilage of acacia or of tragacanth, of five per cent. strength, proved the most satisfactory, in that they were easily applied and would remain in the nose for from two to three days. The preparation employed in this work was the suspension in mucilage of acacia.

The technic of application is as follows: The nasal cavities are first thoroughly sprayed with a Dobell's solution under a pressure of forty pounds. This softens the crusts and they are removed with a cotton applicator. This preliminary cleansing is important, and must be carried out until the nose is free from all crusts. The suspension of scarlet red is then vigorously rubbed, with a cotton applicator, over the mucous membrane of every part of the nose. As the suspension remains adherent for about two days, the treatment was carried out every second or third day at the outset. As the condition improved, the interval of time between treatments was increased. Some of the patients were given the scarlet red in a one per cent. suspension in white petrolatum for home use, to be applied in the form of a spray once a day. The method was employed in all stages of atrophic rhinitis. After two to three weeks of treatment the mucous membrane began to undergo regenerative changes; soon the odor became less marked, and eventually it entirely disappeared. There was a decrease in the formation of crusts; they were softer and easily removed.

A general improvement of the mucous membrane of the nose was noted; from a thin, shiny, anæmic appearance, it became reddened and thickened and assumed a healthier tone. This certainly demonstrates that scarlet red must exert a stimulating effect upon the mucous membrane far in excess of other medicaments formerly employed in this condition. Whether the normal ciliated epithelium is restored to the mucous membrane is a question not as yet determined. The results observed from the local application were encouraging enough to lead to the pursuance of the treatment without disturbing its continuity by removal of a section for microscopical examination. As the local condition improved, there was noted a concomitant improvement in the general condition of the patients. The depreciating effect of the absorption of the effete discharges, producing, as it were, a vicious circle, was thus demonstrated. The total number of patients treated by this method was twenty, and all of them were benefited. The best results were attained in those cases in which the treatment was most faithfully carried out; for, as is customary in dispensary work, treatment was in some of the cases intermittent. Therefore the patients treated privately showed the most gratifying results. As a check upon this work, the following system was followed: Cases were examined and diagnosticated by Dr. Emil Mayer, chief of the clinic, or by Dr. S. Yankauer, of the same clinic. They were then placed under my care for treatment, and as time elapsed were reexamined by these physicians, who have substantiated the results obtained. The brief histories of six cases are here appended.

Case I. Mrs. L., aged thirty-eight years, for several years complained of dryness of the nose with formation of crusts, a decided odor having been evident for the past year. During this time she was under treatment and had a submucous resection performed. Examination showed a dry, shiny, mucous membrane, hypertrophied left inferior turbinate, atrophy of both middle turbinates, and a large perforation of the septum at the middle third. Since the operation the condition had become worse. After a few applications of the scarlet red there was a disappearance of the crusts and odor and a general improvement of the mucous membrane. Continued treatment for a few months. Patient is now seen at irregular intervals.

Case II. Miss G. G., aged nineteen years; feather worker. For one year complained of frequent blowing of the nose, dryness, and marked fetor. Had been under treatment for four months without relief. Examination showed nares large and roomy, mucous membrane pale, thin, shiny, and covered with thick greenish, adherent, foul smelling crusts; the odor being nauseating. Upon removal of the crusts the surface of the mucous membrane was bleeding. Both middle turbinates were markedly atrophied and both inferior turbinates partially so. This case was rather resistant to treatment at the outset, and other causes of trouble were investigated, though without success. Transillumination, the Wassermann reaction, and examination of heart and lungs all proved negative. After two months of patient and persistent treatment, however, favorable results were noted. The crusts and odor diminished, the mucous membrane assumed a healthier tone, and the turbinal mucous membrane became thickened and would pit on pressure with a probe. The treatment was continued for six months and a very favorable result was obtained. The patient is now free from crusts and odor.

The improvement in the general condition was marked, and this without systemic treatment.

CASE III. Mrs. H. S., aged thirty-two years; housewife; for eight years had complained of having to blow her nose frequently and of local dryness, crusts, and odor. Had been under treatment for various periods during this time. Examination.—Mucous membrane thin, shiny, anemic, and covered with thick, offensive smelling crusts and a thick, greenish yellow secretion; both middle turbinates atrophied; transillumination negative. In three weeks improvement was noted; discharge less, odor less, mucous membrane becoming reddened. After this the patient did not appear for treatment for three months. There had been, however, no retrogression to the former condition. With treatment twice a week the patient was completely relieved. Is now seen at irregular intervals.

CASE IV. Miss M. P., aged nineteen years, saleswoman; for four years had complained of dryness and crusts in the nose with bad odor; had been under treatment for this condition but without relief. Examination.—Right nares large and roomy; deviation of the upper middle third of septum to the left; atrophy of both middle turbinates and left inferior turbinate; mucous membrane dry, pale, and glassy; crusts very thick, greenish, and foul smelling; transillumination negative. This patient has been under treatment for three months and is showing favorable results. She continues under care.

CASE V. Miss H. J., aged eighteen years, stenographer; for five years had complained of dry nose, constant blowing, crusts, and odor; had been under treatment for a year. Examination.—Slight deviation of the septum to the right; hypertrophy of the left middle turbinate; atrophy of the left lower turbinate; mucous membrane pale, shiny, and covered with greenish crusts; very bad fetor. Under treatment for two months when improvement was quite marked. Transillumination negative. There was a thick, greenish yellow discharge from the left superior meatus. The left middle turbinate was removed, and the anterior ethmoidal cells curetted. Following this, the applications were continued and improvement progressed rapidly.

CASE VI. Miss X., aged twenty-two years; for some years had complained of a dry nose and the necessity of constant blowing. Examination.—Thin, pale mucous membrane; atrophy of both middle turbinates. In a short time rapid improvement took place, this being an early condition of atrophy.

The writer presents the following conclusions:

1. The substance known as scarlet red may be applied to the nasal mucous membrane without producing any constitutional symptoms.

2. The best excipient for these applications is mucilage of acacia.

3. Lasting results of great benefit may be obtained by the use of this remedy.

4. The treatment is simple and of short duration.

149 WEST 118TH STREET.

Therapeutic Notes.

Treatment of Menorrhagia in the Presence of Acute Inflammation of the Uterine Annexa.—C. Koch, in *Semaine médicale* for January 8, 1913, is credited with the introduction of a new procedure for the treatment of profuse menorrhagia accompanying acute annexitis. Subcutaneous injections of pituitary extract proving ineffective in these obstinate cases, even when doses of two c. c. were given on several successive days, the author resorted to injections of ergot and of pituitary extract directly into the uterine muscle itself.

After the usual preliminary antiseptic preparation of the parts, the anterior lip of the cervix was fixed with a double tenaculum—not drawn forward, however, or but slightly—and a hypodermic needle introduced into it to a depth of one or two centimetres in a direction parallel with the long axis of the uterus. The barrel of the syringe was removed for a moment, in order to make sure that no bloodvessel had been entered by the needle, then reapplied and the injection made.

This procedure was carried out in ten patients. Injections of an aqueous extract of ergot proved effective, the bleeding being arrested almost at once, although where the uterus contracted firmly, some pain was experienced for ten to twenty-four hours, and at the end of this time, bleeding generally recurred, a repetition of the injection becoming necessary. Pituitary extract was next tried. With this agent, the headache, cardiac acceleration, pallor, and nausea sometimes caused by ergot were avoided, and the effect on the hemorrhages was good, although less pronounced than with ergot, some slight oozing still taking place. There was noted with this drug the same possibility of a return of bleeding when the uterus relaxed as with ergot, but, on the whole, the use of the pituitary preparation is preferred by the author.

Miscellaneous Therapeutical Hints.—Norbert Reader, in the *Practitioner* for November, 1912, points out the value of magnesium carbonate as an inexpensive substitute for bismuth in general practice. In many instances it is no less efficacious than the latter.

The following combination was found valuable by the author in the treatment of cardiac disease:

℞ Ammonii carbonatis, ...gr. iv (0.25 gramme);
Tincturæ strophanthi, ...♏x (0.6 c. c.);
Spiritus ætheris compositi, ... } ..āā ʒss (2 c. c.);
Tincturæ lavandulæ compositæ, }
Aquæ chloroformi, q. s. ad.....℥ss (15 c. c.).
M. ft. solutio.
Sig.: To be taken three times daily or every four hours.

In the vomiting sometimes accompanying anemia a combination of arsenic and iron, recommended by Beddard, proved very effective:

℞ Liquoris sodii arsenatis, ...♏l (3 c. c.);
Ferri et ammonii citratis, ...ʒss (15 grammes);
Aquæ menthæ piperitæ, ...ʒiii (100 c. c.).
M. ft. solutio.
Sig.: One teaspoonful three times a day.

Iodine was particularly useful in the treatment of compound fractures. The bones should first be plated, and the entire wound then swabbed out with a one per cent. iodine solution, which may be poured into the wound from a sterile vessel. The author has records of six cases so treated, in all of which primary union of bone and skin occurred.

Treatment of Primrose Dermatitis.—H. A. Sharpe, in the *Journal of the American Medical Association* for December 14, 1912, states that he has had occasion to treat many cases of dermatitis due to the wild primrose flowers. The condition occurs in the spring, may be acute, subacute, or chronic, and is often mistaken for eczema. In the acute cases avoidance of all contact with the cause of the affection, together with the use of mild ointments, are sufficient. In treating a chronic case, the author uses an ointment of the following composition:

Oil of cade, } .....of each 1 to 3 per cent.;
Salicylic acid, }
Phenol (for itching when present) 1 to 3 per cent.;
Ammoniated mercury, ...5 to 15 per cent.;
Zinc oxide ointment, to make.....100 per cent.

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PROPOSED FEDERAL ANTINARCOTIC LEGISLATION.

We have frequently called attention to the abuses in the sale of morphine, cocaine, etc. (in the JOURNAL of May 3, for example), and to the necessity for some form of additional federal legislation on the subject. The difficulties involved in such legislation are, however, well shown by the widely divergent character of the bills relating to this subject recently introduced into Congress. There seem to be only two ways in which the sale of such drugs can be brought under the control of the federal government, namely, under the clause authorizing Congress to regulate interstate commerce or under that relating to the levying of an internal revenue or other tax.

In one of the bills introduced the former clause only is invoked and it simply prohibits the interstate shipment of certain habit forming drugs to other than certain specified classes of individuals (qualified practising physicians, pharmacists, dealers, etc.), and requires that a record of all such shipments and receipts shall be kept, which records are to be open to the inspection of local and other officials when authorized by the Secretary of Agriculture. The control of the sale of the drugs in the States themselves is left to the local authorities; the federal law would simply assist these in determining the source of the drugs and by whom they were received.

The bills of the other type, that is, those relating to the laying of an internal revenue or other tax, are more comprehensive and designed to give the federal government some degree of control over the drugs after they reach intrastate commerce. These measures propose the placing of a tax upon all who sell, prescribe, or dispense the drugs; under their provisions physicians would be required to pay to the United States government an annual tax of one dollar. Some of the measures provide, in addition for a tax upon the drugs themselves. The purpose of these measures is to restrict as far as possible the use of these dangerous drugs to legitimate channels, and also to provide, for the use of local and other officials, a record showing the extent, character, and direction of the sales of such.

Physicians who, more than any other class of men, recognize the harm done by the illegitimate use of these drugs, will be glad to give their support to measures which will diminish such use, even if they themselves are put to some inconveniences; but they will be justified in insisting that when the bills are put into their final shape no unnecessary hardships are imposed upon them. The latter has too often been the case with similar measures introduced in the legislature of this and some other States.

OLD GREENWICH VILLAGE.

There is much of medical as well as general interest associated with the former village of Greenwich, occupying that section of the present borough of Manhattan, just to the south of Fourteenth Street and west of Fifth Avenue, in which "Old Home Week" has lately been celebrated—the first commemoration of the kind ever held in this city. Before New Amsterdam was dreamed of this spot was occupied by an Indian village, and it is said to have been noted for its healthfulness.

In the middle of the eighteenth century the principal landholder in Greenwich was Sir Peter Warren, a distinguished British naval officer. When an epidemic of smallpox broke out in New York, Sir Peter invited the Colonial Assembly to meet at his house, and the members were so pleased with the beauty and healthfulness of the site that it became at once the fashion for residents of the distant city of New York to seek health and recreation in this pretty rural village. From quite early days, however, the citizens had been accustomed to take refuge in Greenwich, on account of its reputation for healthfulness, at times of epidemic disease; and in a letter to the Duke of New Castle, dated April 18, 1739, Lieutenant-Governor Clarke wrote:

I beg to inform your Grace that the Small Pox being in town, and one third part of the Assembly not having had it, I gave them leave to sit at Greenwich.

In 1742 and 1743 Mayor John Cruger reported 165 deaths (the population of the city was then about 10,000) from "an epidemical distemper or plague," which was no doubt yellow fever, and it is recorded that in the summer of both these years many persons fled to Greenwich to escape infection. To go to Greenwich was probably not as efficient a means of protection against smallpox as vaccination (which then, of course, was as yet a thing of the future), but it is a remarkable fact that yellow fever appears never to have crossed the swamp and the meadows lying between the town and the village. In 1798 there was a very severe epidemic of the latter disease in New York, and for a number of succeeding years it recurred almost every summer. Each time that it appeared there was an exodus to Greenwich, and as a certain proportion of those who resorted thither remained permanently, the village constantly added to its regular population. It was, indeed, to the great epidemic of 1822 that the place was largely indebted for the impetus to the active growth and prosperity which characterized it for many years. Mr. John Lambert states that upward of 20,000 persons fled from the city, and in describing the hegira he says:

As soon as the dreadful scourge makes its appearance the inhabitants shut up their shops and fly into the country. Those who cannot go far, on account of business, remove to Greenwich, a small village situate on the border of the Hudson River, about two or three miles from town. Here the merchants and others have their offices and carry on their concerns with little danger from the fever, which does not seem to be contagious beyond a certain distance. The banks and other public offices also remove their business to this place, and markets are regularly established for the supply of the inhabitants.

Wall Street was completely deserted, and the temporary banking offices were, almost without exception, located on one street in Greenwich, which ever since has borne the name of Bank Street. Dr. Richard Bailey, who practised in New York until his death, in 1801, published several valuable monographs on the yellow fever epidemics which had so often devastated the city during the eighteenth century.

It would be interesting, but beyond the scope of this article, to refer to the many persons of note who have resided in or been associated with Greenwich village, but two of them were of such exceptional prominence in American history that mention should perhaps be made of them. Thomas Paine came to live there about the beginning of the nineteenth century, and died there on the eighth of June, 1809, and the commissioners appointed to lay out the city plan, out of compliment to the author of *The Age of Reason*, named one of the streets Reason Street. It was from Greenwich that Aaron Burr went to Weehawken to fight his duel with Hamilton, July 11, 1804; returning there for breakfast after the fatal encounter. Since 1797 Burr had occupied a historic mansion on "Richmond Hill." This dwelling was the headquarters of Washington for a short time in 1776, and from it Nathan Hale was sent on the mission which resulted in his execution; while in 1789 it became the residence of Vice-President John Adams. As United States senator, as well as Vice-President, Burr entertained there many of the most eminent men of the day, including Louis Philippe and the illustrious Talleyrand.

Quite a large number of the prominent New York medical men of former generations were either born in Greenwich or practised there, and the first rector of old St. Luke's Church, on Hudson Street (one of the vestry of which was Clement Moore, author of *The Night before Christmas*), was a physician as well as clergyman, Dr. George Uphold. At the present time, moreover, a respected member of the profession, Dr. Edwin Zimmerman, is familiarly known as the "mayor of Greenwich village."

ANTITOXINES BY THE MOUTH.

Ever since the introduction of antitoxines attempts have been made by clinicians to substitute their administration by the mouth for the usual hypodermic method. The reasons for the preference are obvious, even if not very convincing. The hypodermic method involves considerable care in the technic, entails pain and annoyance to the patient, and generally marks such a radical departure from the usual methods of medication as to introduce an element of considerable apprehension on the part of the layman. By mouth one can administer anything without fear of criticism. Besides, one can leave a prescription and have the drug administered ever so often without the necessity of personal supervision. It is noteworthy that these attempts were made in the early days of serum therapy, when this kind of agent was new and regarded by the laity and a considerable proportion of the profession with some misgivings. Chantemesse was the first to administer diphtheria antitoxine by the mouth in twenty cases of diphtheria, with, he alleged, favorable results. This was in 1896. Following this observer, De Minceis, in France, Urkevitch and Zahorsky, in Russia, and several

clinicians in Germany have tried the method and reported favorably on it. However, all these reports lacked scientific support. They were based almost entirely on bedside observations. Nedrigailoff (*Bolnitchuaja Gazetta Botkina,* January 13, 1899) submitted the question to an experimental investigation, and found the administration of antitoxine by mouth or rectum to be without the slightest protective value. His experiments showed that no antitoxine could be found in the blood following its administration by the gastrointestinal tract, and that seven hours after the introduction by the mouth no antitoxine could be found in the stomach or intestines. Recently, Pivovaroff reported before the St. Petersburg Pediatric Society his experiments on guineapigs, showing the possibility of immunization against diphtheria toxine by antitoxine administered by the colon. Blumenau and Dzerzhgovsky (*Roussky Vratch,* March 9, 1913) applied the method clinically with unfavorable results. They then conducted a series of experiments on animals, with the result that in no instance could they secure immunity by this method of introduction of antitoxine; neither could they discover any antitoxine in the blood of the animals so treated. Moreover, even the administration of toxine by the bowel remained without apparent effect. Incidentally, they discovered that the vagina offered a very satisfactory cavity for the absorption of both toxine and antitoxine. In view of the fact that Sokoloff (*Pediatria,* No. 13, 1912) stated that he had emloyed tuberculin successfully by the colon, the authors administered tuberculin by the bowel to six children known to be tuberculous. None of them reacted, although subsequent application of the tuberculin subcutaneous test proved positive. These facts would seem to throw considerable doubt on the efficacy of the method of internal administration of tuberculin recently advocated. So long as the results obtained by various observers at the bedside and in the laboratory are so contradictory, it does not appear to be good therapy to depend on a method so uncertain, particularly in conditions fraught with great danger to the patient.

DANGER IN WOOD ALCOHOL.

At a recent hearing before the public health committee of the New York Board of Aldermen the danger incurred in the indiscriminate use of wood alcohol was clearly brought out. The hearing was given in connection with a proposed ordinance requiring that all methyl alcohol, whether impure or purified, shall be labeled "wood poison" and bear a poison label, together with a warning that its fumes are apt to produce blindness and its imbibition, death. In at least one State the law requires the seller to label the substance "wood naphtha" instead of "wood alcohol." Several State laws classify it as a poison, and under this classification it should bear a poison label.

But even if such laws were general and were enforced, there would still be a very large field in which methyl alcohol is used and in which it is a source of danger. Methyl alcohol happens to be an excellent and economical solvent for several gum resins, and is therefore used as a solvent in the manufacture of many varnishes. It has other technical uses, and in its application the workman, wholly ignorant of the risk attendant upon its use, may suddenly find himself suffering from paralysis of the optic nerve without any clue to the etiology of the trouble. Such cases could only be reached by legislation prohibiting the use of methyl alcohol in any industry under circumstances in which the workman might possibly inhale the fumes. As a matter of fact, there are very few technical uses in which denatured ethyl alcohol may not be substituted for methyl alcohol, and without great difference in the results or in cost.

Where such laws are enacted they should be adequately enforced. The use of methyl alcohol in medical preparations is already illegal, but the executive secretary of the committee on prevention of blindness of the New York Association for the Blind, at the aldermanic hearing referred to, cited at least two instances in which paregoric had been purchased from retail druggists in New York made with methyl alcohol, and three instances in which refined methyl alcohol had been sold without the poison label required under the laws of the State of New York. We doubt the desirability of requiring methyl alcohol to bear the label "wood poison," for the term does not seem sufficiently descriptive. It would, in our opinion, be sufficient to require it to be labeled "wood naphtha" and to bear a poison label, with the traditional skull and crossbones and a warning against its imbibition. But whatever laws or ordinances may be enacted, adequate relief from the danger involved in the use of wood alcohol cannot be expected until the laws regarding it are more rigidly enforced than they have been in the past. Under the head of Miscellany we refer to the fourth annual report of this committee on the prevention of blindness, which gives further data regarding the danger involved in the use of wood alcohol in various directions. A copy of this report should be seen by every health officer in the United States.

METABOLISM IN PELLAGRA.

The ability of pellagrins to utilize the various foodstuffs, as indicated by a series of fifteen experiments made by Victor C. Myers and Morris S. Fine, and published in the *American Journal of the Medical Sciences* for May, appears to be only slightly if at all below the normal. The elimination of mineral and nitrogenous matter in the urine is strictly in accordance with the dietary and physical conditions of the individuals. A lowered physiological efficiency is indicated by the low creatinin coefficients and the elimination of small amounts of creatin in the urine. Some possible renal irritation may be inferred from the presence of a few hyaline casts in about forty-five per cent. of the cases. Anacidity, a condition common in pellagra, was present in eight of the writers' fourteen cases, and was generally associated with an entire absence of pepsin, or with pepsin in only minute quantities. Indicanuria is marked in pellagrins, and is excessive in the cases with gastric inefficiency. Though the ethereal sulphate hardly parallels the indoxyl potassium sulphate, the quantities eliminated are much higher where anacidity exists, and they also hold a higher ratio to the inorganic sulphates. Indol and skatol, especially the latter, are present in the feces in decidedly abnormal amounts. The presence of excessive amounts of indican in the urine, associated with a high elimination of ethereal sulphates, considered in connection with the abnormal amounts of indol and skatol in the feces, points to some unusual bacterial conditions in the intestine. This putrefaction, according to the writers' views, would appear to take place rather high up in the intestine.

THE RELATION OF STOMOXYS CALCITRANS IN THE TRANSMISSION OF TRYPANOSOMA EVANSI.

The Bureau of Agriculture at Manila, Philippine Islands, has undertaken a series of studies to incrimate or to exclude from all practical consideration the various species of blood sucking insects that might be concerned in the transmission of *Trypanosoma Evansi*. The first of these experiments to be reported on has been published in the *Philippine Journal of Tropical Medicine* for December, 1912. Dr. M. B. Mitzmain, the author of this very interesting essay, has made the fly the object of these experiments. Thus, flies were employed in twenty-nine experiments involving the use of three horses, six monkeys, and twenty-two guineapigs. But only negative results were obtained in the attempts at direct transmission of surra with flies which were induced to bite healthy animals at intervals ranging from five minutes to three days after being permitted to complete the feeding upon infected animals. Hence it seems to be proved that surra does not develop in the body of *Stomoxys calcitrans*. The wounds made by the labium of the fly were not found to be a suitable channel for infection; consequently it is not likely that surra in domestic animals is produced through this avenue by external contamination, namely, feces, mouth parts, or pulvilli of infected flies.

News Items.

Commencement Exercises at Vanderbilt University.—At the annual commencement of the medical department of Vanderbilt University, Nashville, Tenn., held on May 20th, the degree of doctor of medicine was conferred upon seventy-five young men. The address of the evening was delivered by Dr. Ira Landrith.

American Medicopsychological Association.—The next annual meeting of this association will be held in Niagara Falls, Canada, June 10th to 13th. The present officers are: Dr. James T. Searcy, of Tuscaloosa, Ala., president; Dr. Carlos F. MacDonald, of New York, vice-president; Dr. Charles G. Wagner, of Binghamton, N. Y., secretary and treasurer.

Meetings of Medical Societies to be Held in Philadelphia during the Coming Week.—Monday, June 2d, Philadelphia Clinical Association and the Clinical Society of the Jewish Hospital; Wednesday, June 4th, College of Physicians; Thursday, June 5th, Obstetrical Society; Friday, June 6th, Kensington Branch and the Southeast Branch of the County Society.

Tennessee State Medical Association.—At the annual meeting of this association, held recently in Nashville, the following officers were elected: President, Dr. W. D. Haggard, of Nashville; vice-presidents, Middle Tennessee, Dr. E. M. Holmes, of Murfreesboro; West Tennessee, Dr. Robert Mann, of Memphis; East Tennessee, Dr. H. P. Larrimore, of Chattanooga; secretary, Dr. Perry Bromberg, of Nashville.

Commencement Exercises of the Woman's Medical College.—The fiftieth annual commencement of the New York Medical College and Hospital for Women was held on the evening of May 22d in the Waldorf-Astoria Hotel. The degree of doctor of medicine was conferred upon nine young women. On the following evening the Alumnæ Association of the college held a dinner at the Hotel Savoy to celebrate the fiftieth anniversary of the founding of the hospital.

Jefferson Medical College to Have a Tuberculosis Hospital.—The Jefferson Medical College has purchased the property at 236 and 238 Pine Street, Philadelphia, and will use it as a hospital for the treatment of tuberculosis. The building was formerly occupied by the Phipps Institute for the Treatment of Tuberculosis, and will consequently need little alteration. Dr. Thomas McCrae, of Jefferson Medical College, formerly associate professor of medicine at Johns Hopkins University, will have charge of the new institute.

Medical Inspection of Public Schools in New York.—Governor Sulzer on May 24th signed the bill of Senator Blauvelt, amending the education law by providing for medical inspection of pupils attending public schools in New York State, such inspection to include the service of a trained and registered nurse, if one is employed, and for the examination of pupils for the existence of diseases, of physical defects, and for testing the eyes and ears. Medical inspectors are to be employed by the Board of Education in each city and union free school district.

Iowa State Medical Society.—Dr. L. W. Dean, of Iowa City, was elected president of this society, at its annual meeting held in Des Moines on May 7th, 8th, and 9th, succeeding Dr. V. L. Traynor, of Council Bluffs. Other officers elected are: First vice-president, Dr. F. S. Smith, of Nevada; second vice-president, Dr. S. A. Spilman, of Ottumwa; fifth district councilor, Dr. G. E. Crawford, of Cedar Rapids; sixth district councilor, Dr. H. C. Eschbaugh, of Albia; trustee, Dr. G. N. Ryan, of Des Moines. The secretary and treasurer of the society were reelected to serve for another year.

Medical Association of the Greater City of New York.—A special meeting of this association will be held under the direction of the chairman for the Borough of Richmond, at St. George, Staten Island, on Monday evening, June 2d, at 8:30 o'clock. The programme will include the following papers: Report on the Recent International Congress on Physical Education in Paris, by Dr. M. S. Gabriel; the Intrathoracic Use of Nitrogen Gas in the Treatment of Pulmonary Tuberculosis, by Dr. Charles R. Kingsley, Jr.; the Treatment of Arteriosclerosis, by Dr. Louis Faugeres Bishop; Longevity and Rejuvenescence, by Dr. I. L. Nascher.

West Tennessee Medical and Surgical Association.—At the annual meeting of this association, held in Jackson, Tenn., on May 9th, Dr. J. R. Carroll, of Henderson, was elected president. Dr. I. A. McSwain, of Paris, was reelected secretary and treasurer for the twenty-second consecutive term. Dr. I. C. Rawls, of Dyersburg, and Dr. O. S. McCown, of Memphis, are the new vice-presidents of the association. Next year's meeting will be held in Union City.

Medical Society of the County of Steuben, N. Y.—At the ninety-eighth annual meeting of this association, held in Bath on May 13th, the following officers were elected: President, Dr. Douglas H. Smith, of Bath; vice-president, Dr. W. E. Barron, of Addison; secretary and treasurer, Dr. W. W. Smith, of Avoca. Dr. W. W. Smith, who had been secretary and treasurer for seventeen consecutive years, declined reelection. Dr. T. H. Pawling, of Avoca Dr. D. P. Mathewson, of Bath, Dr. F. C. Shaut, of Addison, and Dr. B. R. Wakeman, of Hornell, were elected censors.

Southwestern Kentucky Medical Association.—This association held its forty-third annual meeting in Paducah on May 20th and 21st, and elected the following officers to serve for the ensuing year: President, Dr. G. W. Payne, of Bardwell; first vice-president, Dr. F. G. Larue, of Smithland; second vice-president, Dr. John C. Dismukes, of Mayfield; secretary, Dr. Herbert Hunt, of Mayfield; treasurer, Dr. Vernon Blythe, of Paducah; historian, Dr. R. T. Hocker, of Arlington. The principal feature of the programme was an address on Spinal Surgery by Dr. Russell A. Hibbs, of New York.

Connecticut Valley Medical Association.—The following officers were elected at the annual meeting of this association, held in Bellows Falls, Vt., on May 13th: President, Dr. H. K. Faulkner, of Keene; vice-president, Dr. A. I. Miller, of Brattleboro; secretary and treasurer, Dr. J. Sutcliffe Hill, of Bellows Falls. An interesting programme was presented, which included the address of the retiring president, Dr. A. L. Miner, of Bellows Falls, and papers by Dr. Edward Reynolds, of Boston, Dr. C. A. Pease, of Burlington, Dr. Waldron H. Vanderpoel, of New York, and Dr. C. W. Strobell, of Rutland.

Gifts and Bequests to Hospitals.—The Polyclinic Hospital, New York, has recently received the endowment of three beds in its general wards and an additional donation of $1,000 from Mr. A. H. Troescher, in memory of his friend, the late Mr. Andrew Blum.

The will of Mrs. Charlotte Thompson Ames Brown, who died in Boston on January 18th, provides for the erection of a new hospital building, at a cost of $250,000, for the New England Baptist Hospital on Parker Hill, to be known as the Samuel Newell Brown Hospital. This hospital is also made the residuary legatee of her estate. Other public bequests are $5,000 to the Home for Crippled Children in Boston; $10,000 to the Cullis Consumptive Home; $5,000 to the Burnap Free Home for Aged Women; $50,000 to the Brockton Hospital to be known as the Franklin and Martha K. Ames Fund in memory of her father and mother; $10,000 to the Brockton Hospital, in memory of her niece; $5,000 to the Home for Aged Couples in Boston, and $10,000 to the New England Moral Reform Society.

Resolutions on the Death of Dr. Elmer E. Brown.—At a meeting of the faculty of the Medical Department of Temple University, held on May 28, 1913, the following resolutions were adopted:

WHEREAS, We have learned with profound sorrow of the death of Dr. Elmer E. Brown, vice-president of Temple University, our beloved fellow worker and friend, and,

WHEREAS, His sterling qualities as a man, his kindness of heart, and his devotion to the university have earned for him the deep affection of the entire teaching staff of the Medical Department, and,

WHEREAS, His public spirited, humane, and self sacrificing services to Temple University, its medical school, and its hospitals have contributed much to their great advance and development, and,

WHEREAS, Such a career as was his, in which arduous, incessant, and disinterested labor, all devoted to man's intellectual uplift, and to the alleviation of suffering, should be perpetuated as an inspiring example to our student body and to all men, be it

Resolved, That our faculty place on record all these exemplary virtues of Dr. Elmer E. Brown as a tribute to his noble career, and as an expression of the deep, enduring, and warm affection in which we shall ever hold his memory; and be it further

Resolved, That an engrossed copy of these resolutions be placed in the dean's room at Medical Hall, and a similar copy be forwarded to the bereaved family of our departed friend as an expression of our sincere sympathy and fellowship in their affliction.

THE COMMITTEE ON RESOLUTIONS.
FRANK C. HAMMOND,
C. E. DE M. SAJOUS.

Texas State Medical Association.—The fifty-fifth annual meeting of this society, held in San Antonio, was brought to a close on May 8th, by the election of the following officers to serve for the ensuing year: President, Dr. Marvin L. Graves, of Galveston; vice-presidents, Dr. John H. Foster, of Houston; Dr. J. C. Anderson, of Plainview; Dr. R. R. White, of Temple; secretary, Dr. Holman Taylor, of Fort Worth; treasurer, Dr. W. L. Allison, of Fort Worth; trustee, Dr. John S. Turner, of Dallas; councilors, Dr. W. C. Dickey, of Memphis, third district; Dr. W. A. King, of San Antonio, fifth district (reelected); Dr. W. N. Warllaw, of Corpus Christi, sixth district; Dr. J. C. Scott, of Temple, twelfth district; Dr. W. H. Blythe, of Mt. Pleasant, fifteenth district. Next year's meeting will be held in Houston.

Medical College of Virginia Holds Annual Commencement.—The graduating exercises of the Medical College of Virginia were held on the evening of May 27th, degrees being conferred in the three departments of the college as follows: Forty-two graduates received the degree of doctor of medicine, eleven the degree of doctor of dental surgery, and nine the degree of graduate in pharmacy. At the faculty meeting which preceded the formal graduating exercises, silver loving cups were presented by the faculty to Dr. William H. Taylor, in recognition of his forty years' continuous service as professor of chemistry, and to Dr. Christopher Tompkins, in honor of his long career as dean of the faculty. The presentation to Doctor Taylor was made by Dr. Charles R. Robins, and to Doctor Tompkins by Dr. George Ben Johnston.

Personal.—Dr. Milton B. Hartzell has resigned the chair of clinical dermatology in the Woman's Medical College of Pennsylvania, Philadelphia. His successor has not been chosen as yet.

Dr. David Starr Jordan has resigned as president of Stanford University, to accept the office of chancellor.

Dr. George Gibier Rambaud, head of the New York Pasteur Institute, has been appointed director of the Friedmann Institute for the Treatment of Tuberculosis, on West End Avenue.

Dr. Daniel O. Orth, of Chicago, has been appointed by Governor Dunne to represent the State of Illinois at the congress on school hygiene, to be held in Buffalo in August.

Dr. James T. Faulkner, of Lansing, Kansas, was recently appointed physician to the Kansas State Penitentiary, succeeding Doctor Axford.

Dr. Oscar M. Schloss has succeeded Dr. Ira S. Wile as consulting physician at the Riverside Kitchen of the New York Diet Kitchen Association.

The Duhring Medical Legacies.—Broadly considered as was the entire life of their donor, the legacies for humanitarian purposes in the will of the late Dr. Louis A. Duhring are many sided. Those of peculiarly medical interest were contingent gifts of $5,000 to the Aid Association of the Philadelphia County Medical Society and $1,000 to the Philadelphia School for Nurses. Manuscripts on cutaneous diseases, as well as notes of cases of the donor, are to be given to the university. The testament directs that they be edited scientifically. The medical library of the testator is given to the University of Pennsylvania, and duplicate volumes are given to the College of Physicians. A permanent trust fund of $3,000 is created under the care of the trustees of the University of Pennsylvania for the care of drawings, portraits, medical works, models, and photographs which comprise the collection of the testator. The will also directs that $5,000 be given to the College of Physicians with which works on cutaneous medicine and surgery are to be purchased. The library of the University of Pennsylvania is given $3,000 without direction. The income of $25,000 is to be used for the department of cutaneous medicine of the University of Pennsylvania. A museum for the study of cutaneous diseases is to be established. Should any of the income of this $25,000 trust fund be available for other purposes, lectures, prizes, and scholarships are to be awarded and facilities for research work are to be obtained. The University Hospital is to receive $50,000 for the support of wards of free beds for the treatment of skin diseases and similar physical disorders. The residue of the million dollar estate is to be given to the trustees of the University of Pennsylvania, to be distributed in a specified manner, and to the College of Physicians.

Pith of Progressive Literature.

BERLINER KLINISCHE WOCHENSCHRIFT.

April 7, 1913.

Therapy of Gastric and Intestinal Hemorrhages.—I. Boas says that the treatment of gastric and intestinal hemorrhages is one of the few fields which have been entirely reserved for the activity of internal medicine. Prophylaxis plays an important rôle in cases of this kind. Rest in bed and systematic milk treatment (from three to four litres per day) are advised. The drinking of Carlsbad water should be prohibited, so that no manifest hemorrhage may develop from an occult one. To stop a hemorrhage that has appeared, the patient should abstain from food, and calcium chloride injections should be given when the hemorrhage takes place from the lower portion of the bowel. Nourishing enemata are, in the author's opinion, almost worthless; normal saline solution, given in the drop method, is better. As a rule, one litre is sufficient for twenty-four hours. The addition of adrenalin heightens the effect.

Is there a Bilious Peritonitis without Perforation of the Biliary Passages?—C. Nauwerck and Lübke describe a case of such peritonitis which macroscopically showed absolutely no perforation. Even the water test resulted negatively, and only with the aid of the microscope was there revealed a separation in the continuity of the gallbladder wall which had existed previously, but was now closed up. These findings explain the occurrence of a bilious peritonitis without macroscopical proof of a perforation.

Therapy of Plaut-Vincent Angina.—J. Citron recommends, in severe cases of Plaut-Vincent angina, general salvarsan treatment, together with the local application of salvarsan glycerin, in order to reach the spirochetes existing in the tissues by one method, and by the other reach those spirochetes in the dead masses which can no longer be reached by the blood or lymph.

Experiences with Abderhalden's Ferment Reaction in Carcinoma.—E. Frank and F. Heimann found that out of forty-six uterine carcinomas, forty-five or 97.8 per cent. of the cases had a positive reaction, while out of twenty normal serum cases nineteen, or ninety-five per cent. had a negative reaction with Abderhalden ferment procedure.

Etiology of Rabies.—Fr. Proescher has found microorganisms which he considers the cause of rabies. The final proof will consist in the artificial cultivation and transmission of the organism in animals (from pure cultures).

Conservation of Permanent Preparations in Concentrated Sugar Solution.—G. Magnus's experiments show that the preservation of permanent preparations in concentrated sugar solution is not only a reliable, cheap, and convenient procedure, but also that the results in respect to preservation of the natural colors and the lasting possibility of microscopical examination were entirely satisfactory in every way.

April 14, 1913.

Treatment of Progressive Paralysis. — A. Westphal states that neither the specific nor the nonspecific methods of treating paralytic processes have been proved to be of permanent value in arresting the progress of this disease. Whether these methods of treatment, applied alone or in combination, will be able to prevent remissions, or will be able to produce temporary improvement, only more extended experimentation will be able to show.

Percentage of Chlorine in Blood Serum with Meat Free Diet, Poor and Rich in Salt, and also with Varied Fluid Ingestion.—Arnoldi found that diet poor in salt and free of meat has a tendency to increase the proportion of chlorine in the blood serum; the longer the diet poor in salt is given the greater the proportion becomes. In a meat free diet rich in salt and deficient in water, the proportion of chlorine content of the blood is lessened. The amount of urine is diminished as compared with the period of a diet poor in salt. With a meat free diet rich in salt, and with a superabundance of water, the proportion of chlorine in the blood serum is increased as compared with the salt free period, and the amount of urine is increased. The transition in this regard, that is, by lessened and increased water ingestion, consists of a quantity of fluid of about twenty-four c. c. for each day and for each kilogramme body weight.

Quantitative Determination of Urine for the Practical Physician. — Pfeiffer condemns Esbach's method because of its unreliability, erroneous results being obtained in spite of the most careful observance of all the rules. They have not even an approximate value. The method of Claudius should be used, or the modification of the Tsuchiyas method, given by the author, which consists of precipitation with phosphoric acid.

April 21, 1913.

Effect of High Altitudes on the Pulse.—E. Stern says that the rate of the pulse falls in great altitudes and on the level plains, at night, to about the same extent. It rises after muscular exertion (five minutes' duration), in Orosa for 48.8 beats and in Strassburg for 40.7 beats. The fall of the pulse to normal also exhibits variations. On plains it occurs in a smooth curve, while in mountainous districts the frequency drops at first very rapidly, then slowly, then again rapidly, and then slowly to normal. As a rule the pulse frequency rises greatly in the descent to lower levels.

Scopolamine in Withdrawal of Morphine.—F. H. Mueller disagrees with Fromme, who states that treatment with scopolamine is "the one sure and convenient means of curing morphinism." The use of narcotics makes the withdrawal of morphine unnecessary and harmful (danger of collapse). Of all the narcotics, scopolamine is a most dangerous drug for use in withdrawal cures, because of its action on the heart. It must not be forgoten that there are incurable cases of morphinism, where life is more endangered by the withdrawal than by the morphine itself.

New Operation for Sterilization, Offering the Possibility of a Return of the Ability to Conceive Later.—Blumberg prevents the migration of the ovum into the tube by suturing the ovaries in a pocket of the broad ligament. The procedure may be done through the vagina, and its advantage lies

in the present theoretical possibility of a return of the power of conception at a later date, as a result of liberation of the ovary.

ZENTRALBLATT FÜR GYNÄKOLOGIE.

April 5, 1913.

The Toxicity of the Human Urine during the Puerperium and in Eclampsia.—Zinsser mentions the work of H. Pfeiffer, who reported that the urine of guineapigs normally, but especially when showing anaphylactic shock, contains a poisonous substance which, when introduced intraperitoneally into another guineapig, gives rise to anaphylactic disturbances. Pfeiffer concluded that this was an exact way of determining whether or not parenteral destruction of albumin occurred in certain diseases. Similar work by others suggested that by this means an exact prognosis in cases of eclampsia might be made and that the therapeutic effects might be controlled. Zinsser injected 0.5 c. c. of fresh urine directly into the circulation. The urine was taken from pregnant women, and from those in labor and in the puerperium. The first table gives the effects of the injection upon the temperature. The second table deals with the toxic effect of the urine in eclampsia. As a result of his work Zinsser states that the examination of the urine in nine cases of eclampsia gives no foundation for the belief that eclampsia can be considered as due to toxines formed by the splitting up of albumin. In no case was he able to produce death or clinical manifestations by injecting eclamptic urine into guineapigs.

April 12, 1913.

Intraperitoneal Hemorrhage, intra partum, Due to Rupture of Uterine Veins.—Langes reports a case in which the patient, thirty-two years old, was suddenly seized with severe pain and tenderness in the abdomen during labor. A few hours later she became unconscious and was admitted to the hospital. A laparatomy was performed and the entire uterus amputated, and death followed two hours later. Examination of the uterus showed a circular defect in the serosa, which opened into a large vein. Serial sections showed normal uterine muscle present on the inner side. It was evident that there had been a rupture of a large varicose vein directly beneath the serosa. A brief review of several similar cases is given.

April 19, 1913.

Bacteriological Examinations in Gynecological Cases.—Scholl and Kolde examined one hundred cases, of which twenty-four were carcinoma of the cervix, fifty-three plastic, and the others of varying kind. They found streptococci of different sorts in seventy-two instances and other organisms in the remaining twenty-eight. In comparing the bacteriological findings with the course of the disease and the number of deaths, they conclude that the presence of streptococci, hemolytic, or not, anaerobic or aerobic, is of no value as a means of prognosis.

A Case of Transposition of the Large Vessels of the Heart.— Liebich reports a case in which a child, after living some twelve hours and showing nothing abnormal, suddenly became cyanotic and died. At the autopsy it was found that the aorta sprang from the right ventricle, the pulmonary posterior. The foramen ovale was not completely closed and the ductus Botalli was patulous.

April 26, 1913.

The Development of Malignant Tumors in the Stump of the Uterus Following Supravaginal Amputation. — Hansen reports three cases in which carcinoma developed in the stump of the uterus, although there were no indications of malignant disease at the time of the operations. In view of his experience, as well as that of others, he can see no advantage in an amputation over the total extirpation of the uterus.

CENTRALBLATT FÜR ALLGEMEINE PATHOLOGIE UND PATHOLOGISCHE ANATOMIE.

April 15, 1913.

A Malignant Adenomyoma of the Mesentery.—Ludwig reports this tumor on account of its special interest, in that it appeared in those tissues which normally are free from both epithelium and muscle. He concludes that the tumor had arisen from an embryonal misplaced portion of intestine.

April 30, 1913.

Experimental Leptomeningitis Resulting from Chronic Alcoholic Poisoning.—Lissauer, in experimenting with rabbits, produced, in one instance, a chronic leptomeningitis, characterized by an infiltration of lymphocytes and plasma surrounding the bloodvessels.

ZEITSCHRIFT FÜR AUGENHEILKUNDE.

March and April, 1913.

Lamellar Cataract and Tetany.—Robert Hesse and Eduard Phelps contribute to the disputed question of the interrelation of lamellar cataract and tetany a careful study of forty-three patients with lamellar cataract, thirty-five of whom, or eighty-one per cent., presented unquestionable symptoms of the other disease. From this they conclude that it may be stated as extremely probable that tetany is the causal factor in the production of lamellar cataract.

LYON MÉDICAL.

April 20, 1913.

Tumors of the Cerebellopontine Angle.—E. Pallasse reports two cases of this kind, one of which was peculiar in that there was a hemianesthesia and no choked disks.

Effects of Sodium Nucleinate.—Weill, Gardère, and Dufourt investigated experimentally the question whether the alexin (complement) of the blood could be increased by inducing an artificial leucocytosis by subcutaneous or intravenous injections of sodium neucleinate. Tests made in both human beings and animals showed practically constantly that the amount of complement present bore no relation to the leucocytosis.

Acute Biliary Ascites.—Leriche and Crémieu report the case of a man, thirty-five years of age, in whom, upon opening the abdomen because of signs of acute peritoneal involvement, the cavity was found filled with a strongly bilestained fluid. No

perforation of the biliary apparatus could be found, but from the greatly enlarged and distended gall-bladder, filled with concretions, a constant transudation of bile was seen to be taking place. Cholecystectomy was practised, and the patient recovered.

Secondary Lobar Pneumonia in Measles.—Weill, Mouriquand, and Gardère point out that lobar pneumonia may occur either during the eruptive period or in convalescence from measles. While much less common than bronchopneumonia, the lobar affection should be recognized when present, as the prognosis is far less unfavorable than where lobular involvement occurs. The differential diagnosis in measles is rendered more difficult than usual by the simultaneous bronchitis, irregular temperature curve, etc., but it can easily be made with the x rays, which, in the case of lobar pneumonia, show a characteristic triangular area of consolidation. This triangle can be demonstrated even before any sign is elicited by auscultation, as was the case in one of the authors' two patients. The second patient succumbed, and a condition of gray hepatization was found at the autopsy.

PARIS MÉDICAL.

April 12, 1913.

Diagnosis of Intermittent Claudication.—J. Heitz shows that by a study of the range of oscillations observed with the Pachon sphygmooscillometer when the cuff of the latter is applied successively at different levels on the lower extremities, much information can be obtained concerning the condition of the subjacent arterial trunks. Thus in six cases of intermittent claudication he was able to demonstrate with considerable precision the seat and extent of arterial involvement, and to follow, with the pressure instrument, the improved circulation in the part resulting from appropriate treatment. In cases of arterial narrowing not yet causing symptoms the method permits of making a definite decision as to the presence of circulatory difficulty, where the pulse of the dorsalis pedis is hardly perceptible on palpation. Where intermittent claudication is already manifest, one can ascertain whether the vascular lesions are limited to the arteries of the foot or, as is generally the case, involve the tibials. In some cases the femorals are also shown to be involved in the lower third of the thigh. Heitz has become convinced that in addition to organic disease functional trouble in the arteries (probably spasm of the muscular coat) plays an important rôle in these cases, and that the latter factor can be in a measure overcome by treatment, e. g., iodides, hot air applications, and carbon dioxide baths.

April 26, 1913.

Syphilitic Neurotropism in a Family.—P. Carnot and J. Dumont report the history of a family in which a predisposition to central nervous disease appeared to be transmitted by the syphilitic father to two of the offspring. The father died of general paralysis. The first child, at sixteen years, became the subject of gastric crises, which have continued since, and later definite signs of a slowly progressive tabes. The seventh and last child was taken at twenty-one years with an undoubtedly syphilitic hemiplegia, which improved under treatment, but was followed by sudden death two weeks after discharge from the hospital. This patient presented numerous stigmata of congenital syphilis and a positive Wassermann reaction.

Abbott's Method in the Treatment of Old Scolioses.—F. Calot and J. Privat, in an article illustrated with Abbott's own slides, laud the method of treatment introduced by him. They are inclined to accept his statement that all third degree scolioses can be overcome with it, provided the condition has not been present too long a time.

PRESSE MÉDICALE.

April 26, 1913.

Opening Submaxillary Abscesses through the Mouth.—H. Morestin advises this mode of intervention in cases where the disfigurement resulting from the scar of a skin incision in the treatment of acute suppuration of the submaxillary lymphatics is a matter of serious concern to the patient, as in the female sex. He reports three cases in which incision through the mouth proved entirely satisfactory, healing taking place promptly and without any complication. In each case at the time of operation the suppurative process had already caused infiltration of the subcutaneous tissues and adhesion and redness of the skin. Under general anesthesia, and with the mouth held open wide and the tongue pulled to the opposite side, the author incises the floor of the mouth at the point of deep induration, if this is palpable, or if not, at any point between the first bicuspid and the angle of the jaw. The first jet of pus is taken up by gauze previously placed at the back of the mouth; this is quickly replaced by more gauze, the cavity roughly cleared out, and the incision then enlarged, so that the pocket can be carefully cleansed and disinfected with ether or tincture of iodine. A rather tight gauze packing is then inserted. This is removed in two or three days and replaced by shallower drains. In six or seven days healing is already so far advanced that no more gauze can be introduced.

Hyposphyxic Syndrome and Polyglandular Insufficiency.—A. Martinet first refers to former articles, in which he pointed out that under normal circulatory conditions, the mean arterial pressure and the viscosity of the blood are parallel, each varying in direct ratio with the other. In the hyposphyxic syndrome, on the other hand, characterized by a constantly weak circulatory function, with tendency to venous stasis, cold limbs, hepatic congestion, etc. (see this JOURNAL for February 1, 1913, page 253), the viscosity is high in comparison with the mean pressure, which is normal or low. In forty-eight cases of this type under observation evidences of insufficient glandular activity were noted in almost every instance, especially as regards the digestive tract—anorexia, nausea, slow digestion, and poor motility, constipation, occasionally elimentary glycosuria, and, in one case, complete suppression of the salivary secretion. Assimilation in these patients is poor, and sometimes there is emaciation. In other instances the patients are stout, or even obese. The ductless glands are frequently involved, as illustrated in three cases of gigantism with testicular insufficiency, two cases of ovarian and thyroid insufficiency, four cases with insufficient adrenals, five of mental disturbance, etc. Hyposphyxia and poor glandular functions—

hypocrinia—coexist so regularly as to preclude a mere coincidence. The former appears frequently, if not always, to be the primary condition, the hypocrinia, however, itself reacting in a complex manner on the hyposphyxia, forming a vicious circle.

Technic of Exclusion of the Pylorus.—G. Parlavecchio recommends that pyloric exclusion be effected by passing around the pylorus a ribbon of cotton material about one centimetre wide, tightening it enough to obliterate the lumen without unduly compressing the tissues, suturing the extremities of the ribbon, and burying the whole by means of three seroserous sutures. Posterior gastroenterostomy is then performed. With this procedure the pylorus remains occluded for several months, giving ample time for healing of the gastric ulcers. No pain during digestion is noted after exclusion thus procured. The ribbon can be placed some distance from the pylorus if desired.

SEMAINE MÉDICALE.

April 30, 1913.

Causes of Intestinal Obstruction in Pregnancy.—R. de Bovis discusses the origin of the occlusion in the twenty per cent. of cases of obstruction in pregnancy or the puerperium where hitherto no definite mechanical cause has been evident. He is inclined to accept the theory recently advanced by Van der Hoeven, based on clinical observations, that the condition may arise owing to induration of the vagina, annexa, or uterine ligaments—as may occur through hypoplasia or previous peritoneal infection—these preventing the body of the uterus from rising out of the plevis and thus causing compression of the rectum. In the puerperal uterus, on the other hand, obstruction can arise through excessive retraction of the uterus by the overtense uterine ligaments, in cases where the sacral promontory is unusually prominent, as in rachitic pelves. De Bovis adduces cases of other observers and his own in support of this hypothesis, and calls attention to the favorable results obtained in such cases by placing the patient in the genupectoral posture or lateral decubitus.

REVUE MÉDICALE DE LA SUISSE ROMANDE.

April, 1913.

Artificial Pneumothorax in Pulmonary Tuberculosis.—R. Burnand describes the results obtained in a series of thirty-eight cases. Of these, fourteen are excluded from detailed consideration because of insufficient introduction of gas, the fact that the cases were very recent, etc.; leaving twenty-four. Fourteen of the latter were more or less benefited; in the remainder, the results were doubtful, nil, or only temporarily favorable. In one case, rapidly progressing and in bad general condition, the measure brought about complete arrest of expectoration in sixteen days, and the patient was afebrile after twenty-four days. Subsequently he regained all appearances of health, and was still well a year after, monthly gas injections being continued. In nine other cases, of which eight were in the third stage, the disease process in all its manifestations was brought to a standstill, some slight expectoration, however, still persisting. In six instances fever disappeared within three weeks. Burnand does not believe the procedure should be recommended as yet for the routine treatment of tuberculosis, owing to possibility of harmful results—though careful technic renders these rare. It is indicated where nothing can be lost by it, i. e., where the disease is apparently progressing to a fatal termination. In grave cases practically at a standstill, or slightly improving, it is hardly advisable. Apparently the only absolute contraindications to the method, however, are bilateral active disease (except, perhaps, in "galloping" cases) and grave extrapulmonary complications. Cardiac weakness, cachexia, suspected widespread pleural adhesions, and quiescent contralateral disease probably should be considered only relative contraindications.

Examinations for Tubercle Bacilli.—Seelos considers a granular appearance of these bacilli the only definite favorable prognostic sign that can be had from examination of the sputum. Plasmolytic degeneration of the bacilli constantly occurs where treatment is proving effective. The number of bacilli found bears no relation to the patient's actual condition. Not only do different portions of a specimen of sputum contain varying numbers of bacilli, but the number often varies at different times in a single day in the same patient. The so called granular forms of tubercle virus are considered by the author products of degeneration of the bacilli; he has never missed finding the bacilli themselves in cases where the granules were detected. In examining for bacilli he adds to the sputum two drops of ten per cent. sodium hydroxide solution, shakes in a glassstoppered bottle, heats to boiling, adds one third part of fifty per cent. alcohol, and allows the product to stand in a conical glass for a few hours; after which the upper two thirds are decanted and the remainder subjected to centrifugation at 4,000 revolutions a minute. The flocculent deposit is then placed on slides previously cleansed with potassium permanganate, concentrated sulphuric acid, and absolute alcohol. Two slides are slid one over the other until the deposit has become dry. Fixation is then secured and the specimen stained by the Ziehl-Neelsen method, using five per cent. sulphuric acid and seventy per cent. alcohol for decolorization. The staining is done with the slides on a warm copper plate. Finally, the preparations are washed in running water and counterstained with Loeffler's methylene blue.

Bilateral Renal Tuberculosis. — C. Perrier, after discussing the diagnosis and treatment of this condition, endorses suprapubic cystostomy for cases of bilateral renal tuberculosis with painful cystitis in which nephrectomy is contraindicated. The pain and tenesmus are partly or almost entirely relieved by this measure, and the general condition of the patients much improved.

BRITISH MEDICAL JOURNAL.

May 10, 1913.

Remarks on Transverse Colostomy as the Operation of Selection.—Lawrie McGavin states the requirements of a really good colostomy operation as: 1. Good sphincter control; 2. firm support for belt and plug; 3. freedom from prolapse; 4. accessibility; 5. good spur formation; 6. removal of

the colostomy to a distance from the site of growth. A seriatim consideration of the iliac and lumbar operations reveals the frequent failure of each to fulfill one or more of the requisites, and even the iliac colostomy has little to recommend it. On the other hand, the transverse colostomy seems to fulfill all of the necessities in a large proportion of cases and has few of the common defects. The anatomical position of the transverse colon does away with the effects of gravity in promoting leakage; it even does more than this, for the splenic flexure is higher than the hepatic, and hence if the colostomy be placed to the left of the middle line the passage of the bowel contents toward it must be against gravity before their escape. For the same reason, prolapse is not likely to occur. McGavin has never seen either in his experience. The transverse colon between the hepatic flexure and the stoma acts as a receptacle which can be conveniently emptied from time to time, and patients gain very perfect control over this act, the bowels being moved morning and evening with great regularity. The stoma being made through the thickest and strongest portion of the rectus, and at a point where the fibrous tissues also give their maximum support, the sphincter provided is as nearly perfect as an artificial one can be. The location is ideal for the fitting of a belt, and the costal extremity as this point gives a purchase from which sufficient pressure can be made. Furthermore, greater pressure can be comfortably borne at this point than is the case lower down. The position of the opening is such that it is very easy for the patient to cleanse it and care for it. The site of operation is distant from the most frequent location of growth. Lastly, ultimate reconstitution of the colon is more easily and safely accomplished in this location than in the iliac operation. McGavin supports his contentions with the records of twenty-six cases.

The Interneuronic Synapse in Disease.—B. Henry Shaw does not believe that the cell exhaustion theory explains satisfactorily the pathology of acute delirium. Analyzing twenty-five cases of insanity resulting from sudden and violent mental shock and seventeen cases resulting from the exhaustion of surgical operations, he finds that there was a family history of insanity in about twenty-five per cent. of each group. The average time required for recovery was 5.8 months in the cases due to shock, and 16.2 months in the cases due to operation; that is, about three times as long in the latter. In cases showing delirium only the average time for recovery was about the same in both groups, namely, from three to four months. In shock the tendency is to the development of acute delirium, while in the exhaustion cases, after operation, the trend is toward depression. In the deliriant cases the tendency is toward rapid recovery or death, while in the others permanent insanity often results. The greater the shock the more the likelihood of delirium, and if the exhaustion theory be invoked, this would be an apparent contradiction in the result to be expected. A sudden minor shock gives rise to a "start" and a sensation similar to an electric discharge through the body. This being a matter of common observation, is it not probable that a very intense nervous discharge might seriously damage the finer nerve arborizations and synaptic junctions, causing a "synaptic fusion" which might be likened to the fusion of electric wires? This, occurring in the higher neuronic terminals and interneuronic membranes, might cause dissociation of the higher centres and misinterpretation of stimuli. The higher associative neurons being the latest devedoping terminal arborizations, are probably the most delicate and susceptible. A further point of interest in this connection is the fact that the average time required for recovery from acute delirium due to shock is identical with that required for nerve regeneration after trauma. Shaw suggests that hysteria may be due to too low an interneuronic resistance, resulting in a constant leakage of nerve current outside the area to which it is normally limited. The opposite condition—an abnormally great resistance—with a periodic disorderly discharge of stored up nerve impulses, might explain certain forms of epilepsy. It might even be possible to locate the region in which the faulty synaptic action was located by a study of the way in which the patient responded to each discharge.

LANCET.

May 10, 1913.

The Physiology of the Open Air Treatment.—Leonard Hill cites a long series of observations made to discover the toxic matters in the "close" air of overcrowded rooms, and concludes that no toxic matter is present; that there is no material reduction in the percentage of oxygen or increase in that of carbon dioxide in such air. The discomfort is due to an excess of moisture and the heat, together with the absence of motion in the air. Per contra, the good effects of open air are due to the lower temperature, smaller amount of moisture, and the fact that it is in motion. He says: "Modern life is tending to put people into confined places, heated by convectors, with perfectly made windows, no draughts, and that kind of thing, and it is diminishing the metabolism, and vigor, health, and happiness of everybody, quite apart from causing consumption."

"Colds in the Head."—Leonard Hill and Francis F. Muecke find that when man is confined in a warm (80° F.), moist atmosphere, the mucous membrane of the nose flushes and swells, becoming turgid with blood and tissue lymph, and covered with a thick secretion. Passing from this warm into a cold atmosphere, the mucous membrane promptly becomes paler, but still remains swollen with tissue lymph. In a warm, crowded room the thick secretion on the nasal mucosa will become massively infected with bacteria, explosively sprayed out by the other occupants who sneeze, cough, and speak in the room. When one passes out into the cold after being in such a room, the nasal mucosa is not only constricted, but is chilled, and the defensive mechanisms of the blood, the immunizing properties of the plasma, the cleansing action of the ciliated epithelium, and phagocytic action of the white corpuscles are dimnished by the low temperature, while the pathogenic bacteria find a suitable nidus for their growth in the secre-

tion and tissue lymph of the swollen mucous membrane. "Apart," he says, "from the general question of health and immunity, we believe it is the massive direct transmission of bacteria from one to another in warm, confined atmospheres, and the subsequent exposure to the cold, moist outer air which together contribute to the infection of the susceptible individuals. We can lessen our liability to such infection by keeping the air of our rooms and crowded meeting places cool and moving. We find that a fan set to whirl the air in our experimental chamber will keep the nose paler and drier, and the airways patent, even when the air is heated to 100° dry and 83° F. wet bulb."

Alimentary Toxemia.—W. E. Dixon holds the view that, in general, alimentary toxemia is not a poisoning produced by "toxines" in the strict sense of the word, but by relatively simple chemical substances, certainly not of a more complex nature than many of the alkaloids. For instance, many of the amino acids which are not toxic may be acted upon by fermentative or putrefactive bacteria in the intestine, with the production of more or less highly active poisons. The simplest way in which this may be accomplished is through the decarboxydation of the amino acids. Among the products which may thus be formed from material likely to be present in the intestine are: Hydroxyphenylethylamine, a histidine base, indolethylamine agmatine, isoamylamine, phenylethylamine, putrescine, and cadaverine, and indol and skatol. It is probable that many of these are normally formed in small amounts in the intestine, but never enter the circulation; being either destroyed in the intestine, combined with some other substance, as sulphuric acid, which renders them nontoxic, or they are destroyed in the liver.

The Prognostic Significance of Secondary Polycythemia in Cardiopulmonary Cases.—F. Parkes Weber includes under the term, "cardiopulmonary" cases, the late stages of emphysema, chronic bronchitis, old bilateral pleuritic adhesions, chronic interstitial pneumonia, and pulmonary fibrosis. He believes that in such cases when polycythemia comes on, and a great degree of cyanosis develops, the outlook is extremely grave. Death may be due to actual carbonic acid poisoning, to intercurrent bronchopneumonia or other affection, or to gradual heart failure.

INDIAN MEDICAL GAZETTE.

April, 1013

Control of the Eye in Cataract Operations.—F. W. Sumner points out that the one, and often insuperable, difficulty in removing the lens in its capsule according to Smith's method is the necessity of a skilled assistant to take charge of the eyelids to prevent the patient making pressure upon the eyeball. Smith himself emphasizes this necessity, and states in his book that assistance at some 100 extractions is needed before the requisite skill is acquired; meantime the assistant takes charge not only of the patient's eyelids, but also of the operator's reputation, for the least flaw in correctly holding the eye may have disastrous consequences. To obviate this necessity, Sumner has devised a speculum that differs somewhat in its form from the one usually employed. Its handle has a curve to accommodate the index finger; the ball of the thumb rests on the spring; the portion of the upper blade which slips under the upper eyelid is narrower and projects under the lid much farther than that of the ordinary one. Different sizes are needed for different eyes. For the corneal incision it is introduced and used as the ordinary speculum, except that the outer edge of the upper eyelid must be held back with a blunt hook to prevent the possibility of the knife touching it. The assistant now takes a firm grasp of the speculum between the index finger and thumb, the other fingers lying against the side of the face; the pressure of the thumb on the spring end of the speculum, acting through the index finger as a fulcrum, tilts the eyelid as much as is necessary. The assistant's other hand is spread out over the patient's head and, the eyebrow having been drawn well back, his thumb presses against the upper edge of the orbit.

BOSTON MEDICAL AND SURGICAL JOURNAL.

May 15, 1913.

The Excretion of Formalin in the Urine; an Inquiry into the Accuracy of Burnam's Test.—George G. Smith says that Burnam's test for formaldehyde in urine is definitely positive when this substance is present in the strength of one part in 40,000 or more. The urine should be examined as soon as possible after it has been voided. A negative test at one time does not prove that formaldehyde is never liberated. He believes that formaldehyde is liberated from the hexamethylenamine by the acids of the urine, not by a specific function of the renal epithelium; the process may take place in the kidney, but is continued in the bladder. Litmus paper proved unreliable as an indicator of the true acidity of the urine in about twenty-five per cent. of the cases examined. The higher the acidity of the urine, measured in terms of its hydrogen in concentration, the greater is its power to set free formaldehyde. The requisite amount of acidity is not great, is present in the majority of normal urines, and can be secured in almost all cases by the use of boric acid or sodium acid phosphate. The writer disagrees with the statements of Burnam and L'Esperance that only from fifty to sixty per cent. of individuals break up hexamethylenamine. Examination of 213 specimens, from fifty individuals, showed that only in the urine of one case was formaldehyde never found.

Serous and Suppurative Labyrinthitis; Differential Diagnosis.—Irving Wilson Voorhees says that a defferential diagnosis between serous and suppurative labyrinthitis is frequently impossible. In general, if the slightest remnant of function is still present, the labyrinth should not be disturbed; there should be no shaking up, no probing, no meddling of any kind, and absolute rest in bed should be enjoined. If the labyrinth is completely out of commission, the history of the case must be weighed carefully and as accurate a diagnosis as possible made. One may wait a week or ten days, and then, if the symptoms become worse in the slightest degree, a labyrinthine operation should be performed.

Artificially Dried Casein; Preliminary Investigation.—Henry I. Bowditch calls attention to the fact that in making whey with raw milk the tough curd of precipitated casein is discarded. He then tells how this casein curd may be saved, dried, and made into stable, pure, soluble or insoluble powder. It may then be used to increase the accuracy of our administration of casein. He will report at a later date the results of feeding on the basis of exact casein percentage.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

May 17, 1913.

A New Differential Leucocyte Count Chart.—W. H. Watters remarks that in the early days of hematology the leucocyte count was supposed to be a quite reliable guide to the extent, progress, and severity of various infections. Later it was observed that a normal leucocyte count or slight leucocytosis might mean little or no infection, with no need of great resisting force or, on the contrary, it might be indicative of a very severe infection overwhelming the body without even a chance of combating it. An additional index was needed to complement this early one, and was found in the differential count, in which the percentage of the neutrophiles or polynuclears was determined. The degree of leucocytosis is now said to indicate the amount of resistance put forth by the body and the percentage of neutrophiles indicates the virulence of the infection. Information concerning both opposing forces is obtained by making a leucocyte and a differential count. The writer has devised a chart for recording these, which has proved satisfactory to him both from the standpoint of diagnosis and from that of prognosis.

Laryngeal Tuberculosis.—Robert Levy, discussing the various phases of this condition, remarks that in the matter of treatment the modern consensus supports the following measures: Treatment by means of rest to the vocal organs in conjunction with rest and general hygienic care; local measures, modifications of surgical procedures (among these the use of the galvanocautery has the most adherents); the relief of pain by injection or section of the superior laryngeal nerve; the use of tuberculin. The establishment of thorough normal nasal respiration, climatic treatment, and a maximum of nutritious food, fresh air, and abundance of sunshine, together with rest and a proper management of the local condition, are the cardinal principles that must guide our treatment.

Skin Grafting without Dressings.—The technic employed by Joseph Wiener is the usual one for Thiersch grafts. The grafts are cut as thin as possible, and applied in the usual manner, suppurating sinuses in the grafted area being packed with iodoform gauze, which is changed as it becomes saturated with the discharge without disturbing any of the grafts. The grafts may be placed within a half inch of a discharging sinus, and they will take. Crusts of inspisated serum form between the grafts during the first day or two; these crusts must not be disturbed. No dressing of any kind is applied for seven or eight days, or even longer. After this time a weak ichthyol ointment is applied over the entire grafted area. Under this dressing the crusts soften and drop off, and the area soon assumes a normal appearance. Wet dressings, even a bland one, should not be applied until at least two weeks have passed, as their early application, in some cases, would macerate the grafts. During the first ten days that the grafts are exposed to the air, they are steadily becoming more hardy. The results from this method of skin grafting have been so uniformly good and successful, even in the most difficult cases, that the writer urges its trial by the profession.

Plague Eradication in Porto Rico.—R. H. Creel relates many interesting and instructive points concerning the recent epidemic of human plague in Porto Rico. Fifty-five cases, all of the bubonic type, were recorded, with a mortality of sixty-five per cent. Although flea infestation was very low, the infestation of rats by chicken flea in San Juan is noteworthy. The decline in rat population was the result of rat proofing. The presumptive evidence points to an extension by infected rats in merchandise. The writer emphasizes the importance of making the water front as rat proof and as rat free as possible, especially where foreign shipments are received.

MEDICAL RECORD.

May 17, 1913.

The Prevention and Cure of Cancer.—Parker Syms confesses that the title of this paper is an ambitious one, as all cancer cannot be prevented nor cured, though he denies that it is either presumptuous or preposterous, since a great deal of cancer can be prevented as well as cured. He emphasizes the fact that cancer is a very prevalent disease, reaping an enormous harvest of victims every year. While, after a careful study of many statistical tables, his mind is in doubt as to whether cancer is on the increase or not, he is fully convinced that it is not on the decrease and must be recognized as one of the most terrible of scourges. In the early stage of cancer pain is not a characteristic sign, and when present at this time it is the exception, while as a rule pain is present in the late stages. Cancer, while always a localized disease at first, always tends to progression and dissemination. In the former instance cure follows complete removal; later, complete removal may not be possible, and if not, cure is out of the question. A "precancerous stage" of the disease is now very generally acknowledged. The writer discusses benign tumors and pigmental moles as causes of cancer, and shows that gastric ulcer and gallstones are in reality precancerous states; as between sixty and seventy per cent. of cancers of the stomach have developed in the site of a preexisting ulcer, or in the cicatrix of an ulcer which has been healed. From which he concludes that the gastric ulcer must first be cured, and that when operation is made for gastric ulcer the ulcer bearing area must be removed. As to gallstones causing cancer, it has been found that in practically 100 per cent. of cases of primary cancer of the gallbladder and bileducts gallstones may be found which have existed for a long period before the cancer de-

veloped. Chronic irritation and chronic inflammation are next discussed as fruitful causes of cancer, and the frequent occurrence of indigestion as a warning of this disease. The importance of early diagnosis and early operation is emphasized by the writer, who states that fifty per cent. of cancers show a definite and easily recognized precancerous stage which, coupled with the fact that 80,000 deaths from cancer occur annually in the United States, would make early diagnosis and early operation the means of saving 40,000 persons annually in our country alone.

The Surgical Treatment of Cancer of the Esophagus.—Willy Myer states axiomatically that the time when the surgeon should receive this class of patients is when the general practitioner has become convinced, nay, merely suspicious, that the patient is afflicted with cancer of the esophagus, since he is past help from the general practitioner, under whose care the mortality must be 100 per cent. and the length of life not more than twelve or fifteen months at best. If a patient conplains of difficult deglutition he should be subjected to a rigid examination at once. In nearly eighty per cent. of these cases cardiospasm may be excluded, the presence of a diverticulum, pressure upon the esophagus from within by an aneurysm or by glands or by a mediastinal tumor, a cicatricial stricture, a benign stenosis following the rather rarer affections of a tuberculous or specific ulceration or a peptic ulcer at the cardia, and if these can all be excluded the patient is doomed unless the surgeon has a chance in the early stages to save him by the knife. If the probabilities are for cancer, an exploratory thoracotomy is indicated, and if this proves that the diagnosis of cancer is correct, the surgeon should be prepared to proceed immediately on the proper lines. The writer's choice of operation in this latter case is gastrostomy, using Jianu's new method, in which a part of the major curvature of the stomach is dissected and formed into a long, gutlike tube, one end of which remains connected with, and opens into, what is left of the stomach, while the other end is free (the gastrostomy opening is at the level of the cartilage of the third left rib). Where the location of the carcinoma is above, behind, or just below the aortic arch, the newly formed tube is drawn up extrathoracically, below the skin or pectoral muscle, to a point next to or above the mammary gland (Jianu), and at a second sitting, after resection, the oral end of the esophagus having also been transposed extrathoracically, the connection is made between the two, either by end to end suture or by a subsequent plastic operation.

Cancer of the Uterus.—Periodically and repeatedly, says Reginald M. Rawls, have our expectations in the treatment of cancer been raised to the highest pitch, only to find that the hope of a cure was based on the assertion of overenthusiastic laboratory or clinical workers, leaving the cancer question still unsolved; there being no specific and the only means at hand for cure being early diagnosis and immediate operation. A radical removal of the growth will give a cure, as it is generally conceded that cancer in its earliest stage is a local condition. The earliest symptoms are so atypical that the laboratory workers have in the last few years developed many tests to aid in diagnosis. These tests are physical, chemical, and serological in character, and are more or less fully explained by the writer. In the matter of treatment, the nonoperative methods are applicable to inoperable cases and as a means of preventing postoperative recurrence. These include the x ray, fulguration, the high frequency current, radium and radioactive substances, cancer emulsions and sera, the antimeristem of Schmidt, micrococcus neoformans vaccine, and the eosin selenium combination of Wassermann. The best operative procedure is still in doubt. High amputation of the cervix, the Byrne method of cauterization, the extended abdominal operation as done by Wertheim, and the extended vaginal operation as done by Shauta have their advocates. The object of the last two operations is to remove the uterus and annexa with as much of the parametrium as possible, and also to remove a generous vaginal cuff to get well beyond the area of the growth and to prevent infection from the growth, which has been proved to always harbor microorganisms, especially streptococci. There is a very complete exposure of the ureters on either side, and the uterine vessels are ligated well out from the cervix. If time will permit, the enlarged lymphatic glands are removed. The main solution of the question of uterine carcinoma is to get our cases early, no matter what method of operation or cure we adopt.

INTERSTATE MEDICAL JOURNAL.

April, 1913.

Tuberculosis of the Kidney.—Daniel N. Eisendrath calls attention to this disease, which is of rather frequent occurrence. The larger the number of cases of tuberculosis of the kidney, which are seen by competent judges, the clearer the conviction becomes that were they diagnosticated at an early stage, more patients could be saved from a lingering, painful, and necessarily hopeless illness. From a study of nearly 1,500 operated cases the writer emphasizes certain conclusions: First, in the early months of the disease, only one kidney is affected in over ninety per cent. of the cases. Second, when the diseased kidney has been removed early, the operative (i. e., immediate mortality) was a little over two per cent., and the late or remote mortality (in first five years) not much higher. Even in the latter the mortality is far less than it would have been if the condition had not been recognized early nor not subjected to operation. Third, while we know that pulmonary and many other forms of tuberculosis will heal under hygienic and other nonoperative measures, there has been accorded no authentic case of tuberculosis of the kidney which has recovered under similar treatment without loss of function of the kidney. The writer outlines some of the more frequent clinical pictures of this disease in the order of their frequency: Those cases in which the bladder symptoms predominate, either with clear or turbid urine; those with vague pains over the kidney, pus in the urine, and gradual loss of weight and strength; those with pus in the urine and marked rise of the temperature; those with sudden initial hematuria; those presenting a renal tumor without any symptoms; those with evidences of a

perinephritic abscess of unknown origin. In the matter of treatment, the writer "is compelled" to recommend nephrectomy for every patient where one kidney only is affected by tuberculosis. The contraindications to nephrectomy are: Advanced tuberculosis elsewhere and evidence of advanced involvement of the opposite kidney.

Clinical Observations of Carbonic Acid Brine Baths on the Circulation.—J. H. Honan, after three fourths of a century of experience, observation, and study on the action of carbonic acid baths as a remedial measure in cardiovascular disease, has learned some facts which he believes merit the careful attention of the profession. The fact has been generally overlooked that it is not the strength of the brine, nor the carbonic acid of the usual bath, which exerts or taxes the heart, but the temperature of the bath and the duration of the same. The saline carbonic acid baths produce a mechanical and chemical irritation of the skin, which generates a sense of heat, neutralizing the cold of the water to a certain extent. The mechanical irritation of the carbonic acid brine bath is a very important action. The physiological action of the carbonic acid saline bath on the circulatory system, particularly the increased glandular activity and increased elimination, indicates best its therapeutic value. The fine gradation in the administration of these baths admits of their application in all forms of chronic cardiovascular diseases. The bath of neutral zone, or warmer, relieves the action of the heart. The cooler bath increases the heart's action, but improves the conditions under which the heart performs its work. The cold bath adds extra work to the heart, but not unless administered below or above the neutral zone of temperature (below 30° C., 86° F., or above 39° C., 102.2° F.). High blood pressure or sclerotic condition of the arteries is no contraindication of the baths. The constancy of the action of these baths, the safety with which they may be administered, and the reliability of their effect in recorded conditions inspire a confidence in them which is unknown from any drug or drugs.

Cerebrospinal Fluid Diagnostics.—A. L. Skoog states that the examination of the cerebrospinal fluid is threefold—physical, chemical, and microscopical; each including tests of much importance for arriving at accurate diagnostic conclusions in a large number of neurological diseases. *Physical.* A rough estimation of the pressure of the cerebrospinal fluid in the lumbosacral cistern may be made from the rapidity of the flow. Using a needle of ordinary calibre, from forty to eighty drops per minute should be obtained from the normal individual. From a normal subject the fluid is always clear and limpid. The fluid is cloudy in acute meningitis, whether due to the *Diplococcus intracellularis meningitidis*, pneumococcus, staphylococcus, or other pus producing organism. In a few exceptional cases of epidemic meningitis organisms have been found in fluid appearing clear. In tuberculous meningitis the fluid is often clear, but it may contain flocculi, which are also quite frequently present in chronic meningitis. The fluid is often slightly opalescent in the preparalytic stage of acute poliomyelitis, but it clears at the onset of the paralytic stage. When blood appears we must rule out lesions produced by the puncture. Blood is present in the fluid in cases of cranial and spinal column trauma, and in apoplexies and hemorrhages within a neoplasm with rupture into a ventricle or subarachnoidean space. Xanthochromia may be present with ancient hemorrhage or transudate. *Chemical.* Normal cerebrospinal fluids contain a small amount of albumin, considerably more in that from the lumbosacral cistern than in that from the ventricles. There is a mere trace of globulin, which is greatly augmented in syphilis of the central nervous system, the quantity being an indication of the severity or activity of the disease. There is a reducing substance (evidenced by Fehling's test) in the normal fluid, which in acute meningitis is absent or much decreased, and this diminution seems to bear a relationship to the increase of the polynuclear cells. *Microscopical.* Purulent, turbid, or opalescent fluid means a great increase in cellular content, but a perfectly clear fluid may show a marked pleocytosis. Very few leucocytes, almost exclusively lymphocytes, are found, probably never exceeding five or six c. mm. The writer cautions one never to allow cerebrospinal diagnostics to supplant clinical diagnosis. Rachiocentesis may be utilized for diagnosis and therapeusis at the same time.

MONTHLY CYCLOPEDIA AND MEDICAL BULLETIN.

April, 1913.

Myatonia Congenita.—Alfred Gordon points out that between the myatonia congenita of Oppenheim and infantile muscular atrophy, as described by Werdnig and Hoffman, there are many intermediate forms. It is difficult in every case to decide as to the myelogenous or myogenous origin of the state of the musculature. It may be presumed that in all such cases there has been a prenatal disturbance in the nutrition of the anterior horn cells, in some cases leading to their destruction, thus producing Werdnig-Hoffman's type, in others remaining slight; diminished muscular tone alone resulting. In one of the author's cases symptoms referable to both the diseases were present, and, in addition, optic atrophy, hitherto never observed, was found in pronounced form. The malformed cranium and positive Wassermann test suggested congenital syphilis as the cause of nutritional disturbance in the anterior horn cells in this case; large doses of iodides, furthermore, proved beneficial. In a second case, more of the type of infantile muscular atrophy than myatonia congenita, iodides caused but very little improvement.

Prevention and Surgical Treatment of Cancer.—J. A. McGlinn, discussing cancer prophylaxis, advocates a direct appeal to and education of the public, in order that they shall seek medical aid before the disease has advanced so far as to be almost hopeless. That such a course will bear fruit and entail no evil consequences has been shown by Winter's educational movement in Germany, where the number of cases of cancer of the cervix coming to treatment while still in the operable stage has increased by eighty per cent. In individual hopeless cases it is humane and proper not to inform the patient of the presence of cancer, but to patients still operable or in the precancerous stage

who make light of their condition and will not accept advice promptly the full truth should be told.

Mine Sanitation.—N. P. Brooks gives a thorough discussion of this subject, laying particular stress upon ventilation, on which much study has been expended by engineers, but little if any by sanitarians. More attention should be paid to the size and condition of the air ways, as well as to the humidity and temperature. Other topics considered by the author are drainage, dust, lights, power, underground stables, first aid and rescue work, personal hygiene of the miners, and care of human excreta in the mine, with special reference to hookworm infection. Some form of portable latrine should be used, e. g., heavy cans provided with privy seat covers and also tight iron covers. These could be taken to the surface periodically for emptying, cleansing, and disinfection.

Proceedings of Societies.

MEDICAL SOCIETY OF THE MISSOURI VALLEY.

Twenty-fifth Semiannual Meeting, Held at Kansas City, Mo., March 20 and 21, 1913.

The Second Vice-President, Dr. B. T. Quigley, of Mound City, Mo., in the Chair.

Genital Tuberculosis in the Female.—Dr. W. O. Henry, of Omaha, Nebraska, stated that abortions, gonorrhea, and other inflammations, as well as all injuries or contusions and a general rundown or anemic condition might be predisposing factors in the origin and development of the disease. We should be more careful and thorough in examinations of cases lest we overlook the true conditions at the time when they were most amenable to treatment. Our present day duty and privilege of helping to prevent and cure these cases, as contrasted with those of our predecessors, were so great that it behooved us to wisely safeguard the public by teaching prevention and encouraging the afflicted by a favorable prognosis, unless other serious complications were also found.

Management of Genital Tuberculosis in the Female.—Dr. Palmer Findley, of Omaha, Nebraska, pointed out that genital tuberculosis in woman was rarely a direct cause of death. The fatal issue was usually determined by a primary lesion in the lung or bowel. In at least fifty per cent. of cases there were some symptoms directly chargeable to the tuberculous lesion in the genital organs. It followed that in fully half the cases there was no urgent indication for operative interference. Inasmuch as genital tuberculosis was rarely primary, we must discriminate, if we could, between the symptoms directly due to the primary lesion and those due to the secondary lesion in the genital organs. The symptoms referred to the genital organs would usually yield to palliative measures. A radical operation was rarely justified for relief from symptoms caused by genital tuberculosis. There was danger in operative interference from the awakening of a latent primary focus, from the high primary mortality in these cases, and from the possible unnecessary sacrifice of organs, inasmuch as spontaneous healing was a possibility, as in tuberculosis elsewhere in the body. In tuberculous peritonitis the cause of death in ninety per cent. of cases was chargeable to the primary focus. In operating for tuberculous peritonitis it was well to remove the tubes when infected, in order to cut off the source of supply to the peritoneum. The utmost conservatism should be exercised in dealing with ovaries and uteri in young women. The exudative type of tuberculous peritonitis was alone favorable for operation. One should not operate in the presence of a fever or an active primary focus in the body. Medicinal and hygienic treatment was not to be underrated in the management of these cases. In the absence of severe symptoms directly referred to the lesion in the genitalia or peritoneum, operative measures should give way to the usual hygienic measures, at least for an extended trial.

Dr. H. C. Crowell, of Kansas City, Mo., said that in a large proportion of cases of tuberculosis of the genital organs the symptoms were very acute and pronounced, so far as his observation went. Whether the disease caused death immediately or not, was probably open to question, but ultimately the majority of these cases, even with a local tuberculosis in the pelvis, succumbed, as did patients with other forms of the disease. His experience had been limited to the cases with pelvic manifestations. He had had quite a number of cases in which there was no evident involvement of the lung, and operative procedure had effected a perfect cure, the patients recovering without secondary involvement of other organs.

Doctor Henry, in closing, said it would be a mistake to leave an active focus of tuberculosis in the pelvis or in any of the pelvic organs and expect by local treatment to get rid of it. Removal of the local focus was essential to the patient's getting well

The Surgical Colon.—Dr. A. L. Blesh, of Oklahoma City, said the surgery of this condition consisted in the restoration or establishing of colonic continuity. This might call for anything in the way of an operation from the simple severing of a constricting band to an ileosigmostomy, sometimes with, sometimes without, resection. It was manifestly impossible to treat these conditions by any rule of thumb procedure; but there were a few fixed features connected with the embryology of the organ that, if borne in mind, would assist materially in guiding the surgeon: 1. The location of the most fixed points in the colonic circle, viz., splenic and hepatic flexures. 2. The termination of the ileum, for the reason that here was found normally the shortest ileal mesentery. 3. The cecum (cecum mobile of Wilms). 4. Diverticula. He desired to emphasize the statement that not all the embryological deviations or reversions of the colon were by any means to be considered surgical.

The Rôle of Tonus in the Digestive Canal.—Dr. John M. Bell, of St. Joseph, Mo., stated that atony of the digestive tract existed in all gradations, from a mere slight delay in motility to absolute kinking and retention; it was, therefore, impossible to outline a procedure to restore all cases. The keynote of treatment, except in those cases of more or less acute kinking, was the restoration of normal tone, not merely to the digestive canal, but to the body, and came within the domain of medical treatment, not essentially drugging, but rather hygiene, diet, daily habits, and all those measures which tended to restore vitality.

Diverticulitis of the Sigmoid.—Dr. Arthur D. Dunn, of Omaha, Nebraska, after considering the etiology and pathology of diverticulitis of the sigmoid, and reporting five cases, emphasized the following symptoms which, in the absence of evidence to the contrary, were presumptive of a diverticulitis: 1 Alternating constipation and looseness of the bowels in an individual not previously much troubled in this respect, and which were accompanied by fullness, soreness, or colicky pain in the hypogastrium. 2. Febrile manifestations, and a sharp neutrophilic leucocytosis. 3. Frequency of and pain on urination in the presence of symptoms referable to the lower colon. 4. A palpable tumor mass, usually discovered by rectal examination, often sausageshaped and extending to the left in close relationship to the sigmoid.

Membranous Pericolitis.—Dr. Charles Ryan, of Des Moines, Iowa, related his personal experience, which had been confined to twelve cases. One case was of especial interest, that of a woman, thirty-eight years of age, who presented symptoms of chronic cholecystitis and chronic appendicitis, which was his diagnosis. At operation there was found a well developed membrane extending from a point about three inches above the caput coli to a point on the transverse colon two inches to the left of the median line; the transverse colon had been raised until it occupied a position approximating the anterior border of the liver, the gallbladder being covered, and the membrane spreading over the anterior surface of the stomach. The appendix was kinked, the distal end being incarcerated in a well formed Lane's kink. Simple division of this extensive membrane and kink, with the application of sterile petrolatum to the latter, with appendectomy and cholecystotomy, was the treatment. While she was greatly benefited, the symptoms did not entirely disappear. The results in twelve cases at the present time were: Completely cured, four; greatly benefited, three; showing recurrence to a variable degree, three, and two cases operated in within the past week.

Dr. HERMAN E. PEARSE, of Kansas City, Mo., emphasized the importance of diagnosis, and then discussed the choice of operative procedures in cases of malformations or deviations of the colon.

Dr. C. C. CONOVER, of Kansas City, Mo., recalled the case of a woman who had stenosis three inches to the left of the hepatic flexure, with alternating constipation and diarrhea. She had been treated for neurasthenia for almost four years. She had symptoms of intestinal stenosis and was operated upon. The band or pericolic membrane was removed, and she made a good recovery.

Dr. HENRY S. MUNRO, of Omaha, had noticed one thing in common with every method of treatment in the class of cases under discussion, and that was, a carefully regulated dieteic regimen, coupled with systematic exercise, must follow the operative procedure, no matter what it was.

Dr. E. W. POWELL, of Omaha, said that if we could get these cases to the internist early he could make the diagnosis and correct the condition before the patient got to the stage of the pathological condition known as Lane's kink, but unfortunately the average patient did not consult the internist or the surgeon early. Personally, he thought the simplest operation that would correct the deformity was the one that was ideal.

Dr. JOHN F. BINNIE, of Kansas City, Mo., said there were colons of all sorts and peculiar shapes tucked away in all sorts of ridiculous fashions, and yet they worked very well. If there was a mobile cecum and a mobile (lowest) portion of the ileum we had a loop of intestine which was pretty much in the same condition as the normal sigmoid, and the intestinal work could be carried on very well in that individual; but if we had a fixed ileum near the cecum, and a mobile cecum, then, of course, the cecum could pop around in various directions and produce temporary obstruction. In operating he did not bother about ileal kinks and cecum mobile very much unless he found them combined. In operative work, or in post mortem work, when he had exposed the cecum and found it mobile, he had found the sigmoid plastered down to the abdominal parietes; and this, he thought, was usually the case. Many of these conditions were probably congenital.

Dr. WILLIAM T. REYNOLDS, of Kansas City, Mo., stated that in May last he had operated upon a girl, fourteen years of age, with the idea that he had to deal with appendicitis. He found the appendix comparatively normal, but there was a membrane at the head of the cecum. There was nothing to be observed in the formation of the membrane upon the colon higher up. After operation she went home and was well for about six weeks. Since then she had been having the same pain as formerly. He operated a second time and found a smooth, white, glistening membrane high up on the colon which had formed between May and four weeks ago.

Dr. HOWARD HILL, of Kansas City, Mo., said more observation was needed as to what caused these malformations or deviations of the colon. The looseness of attachment of viscera might be responsible primarily for angulation and similar conditions. There was no use in operating on the cecum alone, as in six or eight weeks these patients got into the same condition they were in before operation. An ileosigmostomy should be done. The difference between an ileosigmoidoscopy and operations upon the cecum and colon was that after an ileosigmostomy the patient got well slowly, but remained well.

Dr. M. J. FORD, of Omaha, cited two cases. In one, on opening the abdomen he found the colon and ascending colon in proper anatomical position, but within an inch and a half of the cecum and caput coli, and extending up over the colon for three inches there was a distinct band running longitudinally across the colon, holding it down. This was released. The other patient had the chain of symptoms which usually accompanied these cases, and had been treated by various physicians for neurasthenia. On opening the abdomen he found he could not get to the head of the colon unless he broke through a number of adhesions to reach the pericolic membrane which extended clear over, and when he got down to where the appendix was he found it was normal, within a sac, and was not adherent to the tissues around it. The appendix was free, and the pericolic membrane spread over it, with the head of the cecum plastered down upon the parietes.

Landry's Paralysis.—Dr. E. M. HUMMEL, of New Orleans, reported a case of Landry's paralysis in a man, forty-six years of age, which gave strong support to the opinion that lowered resistance was the preliminary necessity in the development of the disease, and the agency of psychic depression was again introduced. While no specific organism was likely to be proved the cause of Landry's paralysis, it seemed that some condition of toxicity springing out of unwonted virulence of some one of the bacterial flora native to the body and operating under the auspices of lowered resistance would be settled upon as the cause of this insidious, creeping death, for such might it be characterized in its clinical expression.

Dr. A. L. SKOOG, of Kansas City, Mo., said the mortality from Landry's paralysis ranged from seventy-five to 100 per cent. Children were less frequently attacked than adults. There was a group of acute poliomyelitis cases which might be described as the neurotic type, and in some of these the disease might ascend and be called the neurotic plus the myelitic type. Psychic depression and also physical exhaustion had been named as predisposing causes. Those who had done laboratory work, especially in the last few years, with acute poliomyelitis thoroughly believed that it was due to some infectious process. Very recently Flexner and Noguchi had reported an organism as the cause of acute poliomyelitis which they thought they had isolated and cultivated, and he was inclined to believe they were correct. In view of what was known of acute poliomyelitis, that it could be transmitted to monkeys, it was of considerable interest to have a few cases with frank symptoms of Landry's paralysis and attempt to inoculate animals.

Dr. C. R. WOODSON, of St. Joseph, Mo., said there could be no question but that there were cases of Landry's paralysis in which there was elevation of temperature and sphincter involvement. Some writers were disposed to believe that the disease was a polyneuritis, and while it had some characteristics which were quite different from the ordinary types of polyneuritis, there were others very much like it. There was no question but that we had a flaccid paralysis in poliomyelitis, and in poliomyelitis the arterioles were involved. In Landry's paralysis the spinal ganglion was implicated. According to some authors, there was a disseminated myelitis. Again, there was occasional recovery in cases of Landry's paralysis, but he did not recall any author at the present time who said complete recovery followed in cases of disseminated myelitis.

Dr. C. C. GODDARD, of Leavenworth, Kansas, recalled the case of a physician who was perfectly well apparently up to a certain evening, when he reached out his hand to take hold of the ear of his dog and found he could not hold it. Then he tried with the other nand, and found he could hold the dog's ear. The next morning the left arm was paralyzed, and the other arm became involved. That day he thought he was bound to get out of bed. He threw himself out of bed and fell to the floor. The speaker was called in and made a diagnosis of Landry's paralysis or acute ascending paralysis. The patient could move his feet in bed that day, but from that time he became completely paralyzed both as to sensation and motion in his whole body. This case started in the left arm, which was unusual, as it generally began in the feet. The mind was perfectly clear; his pupils looked all right at the time he went to bed. He had no pain; he had to be catheterized; he could not pass urine after the second day without catheter. After the fourth or fifth day paralysis of deglutition set in; his pulse became weaker and weaker; he gave a sighing respiration, and was dead.

Dr. CHARLES O'NEILL RICH, of Omaha, reported the case of a postman, who was admitted to the hospital complaining of numbness in both feet. He gave a history of sore throat. Paralysis was progressive. At the time poliomyelitis was attracting a great deal of attention and he tried in some way to correlate the two diseases. A diagnosis of Landry's paralysis having been made, he made spinal punctures every six hours. The sphincters were intact, and the only thing very noticeable was the ascending paralysis. The blood count during the eleven days he was in the hospital ranged from 8,000 to 16,000. The spinal fluid ranged from sixty to ninety-six. The lymphocytes per c. c. were much the same as in the cases of anterior poliomyelitis reported at the time. Toward the last the lymphocytes in the spinal fluid had increased. The patient had a Noguchi positive reaction, a negative Wassermann reaction, and denied lues. The majority of clinicians and pathologists considered Landry's paralysis as identical with anterior poliomyelitis, but coming on as it did in this case in adult

life, and death occurring at such an early stage, the patient did not get the resulting polyneuritis, but simply a root lesion and ganglion lesion.

Dr. S. Grover Burnett, of Kansas City, Mo., said that in Landry's paralysis the patient did not die from toxemia, but from the want of air. He died because he had become paralyzed so far as the respiratory function was concerned. He had seen but one case recover, and in this it was a question whether or not he was correct in his diagnosis. The disease began in the lower extremities, took the usual course, extended up, and involved the throat muscles. The paralysis was progressive from one six hours to another. In desperation he gave drachm doses of fluid extract of ergot every three hours. Under the influence of the ergot the disease seemed to be checked; but on the other hand, it was known that this happened once in a while, and a few patients got well.

Dr. Abraham Sophian, of New York, stated that from the studies that had been carried on during the past few years, particularly with reference to clinical and laboratory analyses, the relationship between Landry's paralysis and poliomyelitis had been established, and there was no question but that in some instances Landry's paralysis and poliomyelitis were one and the same disease. Several years ago during a large epidemic of infantile paralysis in New York city, he had seen two cases of Landry's paralysis in children. Poliomyelitis was characterized by two great groups of symptoms, first the motor, or paralytic phenomena, and secondly the symptoms of hydrocephalus. Landry's paralysis had both of these symptom complexes. We had hydrocephalus in all cases of Landry's paralysis Poliomyelitis might affect any part of the central nervous system. The characteristic feature of Landry's paralysis was the ascending paralysis. The cerebrospinal findings in the two diseases were similar.

Rheumatism.—In a symposium on this subject several papers were read in which the various theories as to the etiology of the disease were advanced. The diagnosis of chronic rheumatism, the modern conception of rheumatism, and its treatment, were discussed. In the diagnosis chronic disease of the joints was considered a sign of some focal or systemic disease elsewhere in the body. The diagnosis of chronic disease of the joints depended upon establishing the interrelationship between the focal and systemic disease and the changes in the joints. In the cases observed by the author's treatment directed toward these focal or systemic causes produced the best results upon the joint lesions.

Cancer.—In a symposium on cancer, Dr. W. L. Brosius, Gallatin, Mo., spoke of the theories of Virchow, Rous, Ross, Wassermann, Loeb, etc., as regards the etiology of cancer. Dr. Joseph C. Bloodgood, Baltimore, pointed out the great danger of incomplete operations for cancer in the early stages; while Dr. Franklin H. Martin, Chicago, discussed the early diagnosis of cancer of the uterus and its surgical treatment. Other papers presented dealt with cancer of the stomach from a medical point of view; prevention and treatment of cancer of the skin; cancer of the colon from a diagnostic point of view; surgery of the axilla in advanced mammary cancer, and the x ray treatment of cancer. In the discussion Dr. John F. Binnie, of Kansas City, Mo., said that too much abuse had been poured upon the unfavorable statistics after operative treatment for frank malignant disease in the matter of recurrence. He thought other terms should be used. After cutting out the disease, if we had a reappearance within a comparatively short period of time, say after two or three years, it was a true reappearance of the disease, but it was not a recurrence. It meant that some disease was left and still continued to grow, but when we had a true recurrence, things were somewhat different. If disease appeared again after a lapse of three years, why could it not be the original causes of the disease working again on a patient who had shown himself nonresistant to the noxious influence which caused disease. Thus we had a fresh incidence of the disease, not necessarily a recurrence.

Dr. J. P. Kanoky, of Kansas City, Mo., said that where the cancer was very malignant and affected the deeper tissues, the x ray would afford relief, although it might not cure. As regards superficial ulceration or rodent ulcer, years ago he had employed the actual cautery or the knife. Within the last few years he had used carbon dioxide snow. It was as efficacious as the cautery, much pleasanter than the knife, and the cosmetic results were superior to both. Superficial cancer, or so called rodent ulcer, could be treated with the snow with absolute success.

Dr. W. O. Henry, of Omaha, spoke with reference to enlightening the laity about cancer of the uterus, and said that committees had been appointed by various societies in the United States to do what they could in this direction. There was a large class of physicians, however, who did not attend society meetings and did not read up to date medical journals, and those should be educated as well as the laity. The way to do it was for every State society to have a publicity committee, backed by the authority of the society, to prepare proper articles for the daily press and for the weekly papers in every county.

Dr. A. L. Blesh, of Oklahoma City, wondered how we were going to educate the people upon the cancer question when perhaps nine out of ten of the deep body cancers could not be diagnosticated by the physician himself in time to be of any avail whatever to the patient. Only a few days ago he had examined a woman sent to him by a brother physician, and found far advanced cancer of the cervix. In operating he discovered that the disease had extended so far out into the sides of the pelvis retroperitoneally that he gave it up in despair and closed the abdomen. How were we going to educate the people to consult physicians for cancer when they did not know that the disease existed?

Dr. Donald Macrea, of Council Bluffs, Iowa, said this and other societies ought to take a strong stand with regard to a publicity campaign in educating the laity about cancer. The right time to operate upon these patients was in the precancerous stage.

Dr. H. C. Crowell, of Kansas City, Mo., said if one thing was of greater importance in regard to cancer than anything else, it was the education of the people secondarily and the profession primarily. The average physician of the country was better informed on the scientific methods and procedures and the advanced treatment and advanced theories of cancer than he was on the diagnosis.

Letters to the Editor.

PHYSICIANS AND THE TENEMENT HOUSE DEPARTMENT.

1181 Broadway, New York, *May 21, 1913.*

To the Editor:

An article in the May 17, 1913, issue of the Journal leads me to offer some supplementary and corrective information relative to "Physicians and the Tenement House Department." The medical profession should be well informed on tenement matters, as nothing affects the health of the community so much as housing, and New York city housing is, perhaps, the most difficult city problem in the world. In 1908 I accidentally met in Norway a practising physician who served in the Tuberculosis Clinic of the Presbyterian Hospital, and I advocated a type of building that had been in 1900 available (although untried) in complete form. This resulted, in 1909, in the Vanderbilt Tuberculosis Tenements, of 512 East Seventy-seventh Street, a building housing 384 families. One sixteenth of this building is now in charge of the Association for Improving the Condition of the Poor for trying out one of the most interesting experiments ever offered a large city. Physicians who have read the former article should see these buildings and, at the same time, visit the group called the John Jay Dwellings immediately across the way, at 520 East Seventy-seventh Street, which are identical with the Vanderbilt Tenements, but built at less cost to prove out the principle that this type can be built successfully by the commercial builder, and thus cover a wider range of housing reform. These buildings are in a rather inaccessible part of the city, and that has resulted in many people reading about them and entering upon one side or the other of this discussion without seeing the buildings themselves. Although I have been constantly studying tenement problems ever since I graduated at Columbia University in 1893, I have never seen so much literature about a simple portion of this topic as has been written about this.

What is it all about? If the reader is interested, let him visit extreme East Seventy-seventh Street as far as one

can go, and on either side of the street, next to John Jay Park which faces the river, can be seen these two groups above mentioned. Now, by observing the toilet windows in both the Vanderbilt Tenements and the John Jay Dwellings, you can, at once, see at least that there was reason for the existence of the Tenement Economies Society, which up to last spring had upon its letterhead only this: "To Eliminate the Vent Shafts from Open Stair Tenements." This was its sole object at that time, and through the resolution of the Academy of Medicine, which was proposed by Dr. A. Jacobi and seconded by Dr. Hermann M. Biggs (see *Archives of Pediatrics,* July, 1911, pages 563, 621, and 630, and New York Medical Journal of August 26, 1911, on "Recent Corrective Tenement Legislation") a bill was introduced at Albany. Among those well known to the profession are Professor Charles F. Chandler, who is president of the society, Dr. Floyd M. Crandall, Dr. Alfred Meyer, Dr. William L. Stowell, Dr. Antonio Stella, Dr. William Shannon, Dr. Royal S. Haynes, and Dr. Joseph E. Winters, who advocate the perfection of the type with an unbroken periphery. Professor George F. Canfield, who for many years was president of the State Charities Aid Association and is now its vice-president, has constantly maintained the same attitude, although he does not feel as yet, at any rate, the necessity of a board of appeal to accomplish this object.

In the recent article that has caused my addressing your paper appear these phrases: "constant campaign of misrepresentation"; another, "to promote a fantastic project"; again, "water closets on tenement house stairs"—lastly, "diminish present legal minimum of cubic air space." None of these phrases fit the building which the Tenement Economies Society advocate. There are no buildings, except those in extreme East Seventy-seventh Street, that have as yet been built that do approach its ideal. Open stair tenements were tried in 1879 in the "Monroe," still standing, in Manhattan. The plan was not sufficiently economical or efficient to attract interest. In 1900, when the "economic" open stair tenement was offered and a description published in the *Record and Guide* (March 17, 1900, page 452) evidently the germ theory and fresh air treatment had not been so widely established, for that very reliable paper comments thus: "Apparently the stairs are open to the large court, and are a decidedly bad feature, affording the elements full opportunity to create conditions that would be a menace to health and life of the occupants." This plan, just as the Tenement Economies Society would advocate it to-day, was awarded a prize, in 1900, by the Tenement House Committee of the Charity Organization Society (the letter signed by Mr. Veiller highly commending this plan is available, together with a photograph of the original drawing). So it seems that many of us have gone astray from reviewing imperfectly presented articles, instead of studying the building. The *New York Times,* for instance, last winter printed an article that caused a reasonable ground for misunderstanding. The Academy of Medicine never passed upon the court of appeal matter, nor upon the shape of bedrooms. It only offered the resolutions of May 4, 1911, signed by Doctor Huddleston and Doctor Shannon, that was introduced by Doctor Jacobi and seconded by Doctor Biggs.

It is a mistake to think that the cubic air space of a bedroom was to be cut down by the Tenement Economies Society bill. This bill is at the office of the Journal, and others can be obtained from the corresponding secretary of the Tenement Economies Society, at 1181 Broadway, as it is too long to reprint herewith. The law says today, as it has done for thirteen years, that no room shall be less than seventy square feet in area and with a nine foot ceiling in all cases. This gives the cubic space. (There must, besides, be one room to each suite containing 120 superficial feet of floor area.) Now, last year a new law was enacted fixing the minimum horizontal dimension of this bedroom containing 630 cubic feet in this way: In power elevator apartments certain rooms can be six feet across, while in tenements they must be at least seven feet across. The bill which the Tenement Economies Society submitted was merely to make both classes of house alike for the purpose of lessening the burden on the low wage earner. For instance, it results in less waste space, and thus lower rents, if at times a room six feet by eleven feet eight inches be used instead of seven feet by ten feet. The latter is legal, the former illegal; but only since last spring. Now, the board of appeal for the Tenement House Department is not a matter that can interest the medical profession, but the advisability of such a board, be it an advisory board or a suggesting board or whatever it may be called will be a benefit to the city because it will be *public.* At present this function is assumed by the Tenement House Committee of the Charity Organization Society, which is a *private* body. It can not summon before it whosoever it wishes, nor does it allow to appear before it those who wish to present new methods of housing. Some sort of board of appeal is advocated by many, if not all, members of the New York Chapter of the American Institute of Architects, the Brooklyn Chapter, and the New York Society of Architects. The architects are those who constantly see the lack of such a board because they practise not only with the Tenement House Department, but also with the Building Department, which latter has always had such a board called the Board of Examiners. The author has received encouragement relative to a board of appeal from such architects as Messrs. LaFarge, Boring, Waid, Kohn, Atterbury, Flagg, Chambers, Whitney, Warren, Baker, Meade, Stokes, and Cook, all of whom stand at the very head of the profession, not only in New York, but in the United States. This is not a matter that we expect the medical profession to pass upon.

Those of the readers of the Journal who have struggled to the end of this discussion should really visit both these groups of buildings this very spring, and also see the latest building of the City and Suburban Homes Company (on a nearby corner, Seventy-ninth Street and East River), at last embracing our main progressive feature, which it formerly so bitterly avoided or opposed, a house with all "open stairs."

Henry Atterbury Smith.

Endorsed by:

Charles F. Chandler, Will Walter Jackson,
Samuel Osgood Miller, William P. Miller.

A WARNING.

To the Editor:

The following is the facsimile of a card which has been sent to me from Everdell, Minn.

12 Hrs. Treating — Consulting Surgeon
Chronic Diseases — Mercy Hospital, Philadelphia
C. LOUIS SCHNEIDER, B. Sc., Ph. D., M.D.
Head Physician and Surgeon
CROOKSTON MEDICAL AND SURGICAL INSTITUTE
Two Post Graduate Courses in Berlin, Germany — CROOKSTON, MINN.

Mercy Hospital knows nothing of this man. He is in no way connected with our institution and never has been. From the letter I have from Everdell, Minn., I am sure that this man is a fraud in his dealings with patients there. Of one thing I am certain, he states an absolute untruth when he advertises himself as connected with Mercy Hospital. I hope you will publish this letter as a warning to a gullible public, and for the sterilization of the Surgical Department of Mercy Hospital.

Algernon B. Jackson,
Surgeon.

Book Reviews.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Bovine Tuberculosis and Its Control. By Veranus Alva Moore, B. S., M. D., V. M. D., Professor of Comparative Pathology, Bacteriology, and Meat Inspection, New York State Veterinary College at Cornell University, and Director of the College. With Thirty Full Page Illustrations. Ithaca: Carpenter & Co., 1913. Pp. x-134.

There seems to be an unlimited number of writers and books on tuberculosis. But few of the authors have so well succeeded in producing a valuable book as Dr. V. A.

Moore. The learned professor and director of the New York State Veterinary College at Cornell University gives his reader a clear insight into bovine tuberculosis and its control. In following him through the pages of his book we learn about the history of tuberculosis in cattle, read about the cause of it, the changes produced by it in the tissue, the symptoms, the methods of dissemination, the diagnosis—especially with the help of tuberculin—and the examination of cattle, immunization against and control of bovine tuberculosis. The illustrations on thirty plates are well executed. The book can be well recommended.

Elements of Practical Medicine. By ALFRED H. CARTER, M. D., M. Sc., Fellow of the Royal College of Physicians, London, Professor of Medicine, University of Birmingham, etc. Tenth Edition. London: H. K. Lewis, 1912. Pp. xvii-683.

This little manual considers the subject of general pathology and general medicine, including nervous diseases and diseases of the skin, or rather those diseases of the skin which would be likely to fall into the hands of the general practitioner. Under this latter heading, too, are included drug eruptions and the various forms of skin tumors, benign and malignant. A number of prescriptions are given under the heading of the various diseases for which they are recommended, and in the brief appendix a few routine laboratory measures are considered. It would seem advisable, in the light of present knowledge, to include rheumatic fever under the specific infectious diseases, rather than place it among general diseases as has been done. In speaking of the ductless glands no mention is made of the pituitary gland, and consequently no reference is given to hyperpituitarism or hypopituitarism or to acromegaly, nor is reference made to aplastic anemia and leucanemia. The work cannot, of course, replace any of the larger textbooks, but as a ready reference manual, it has a value.

Outlines of Psychiatry. By WILLIAM A. WHITE, M. D., Superintendent of the Government Hospital for the Insane, Washington, D. C., Professor of Nervous and Mental Diseases, Georgetown University, Washington, D. C., etc. Nervous and Mental Disease Monograph Series No. 1. Fourth Edition, Revised and Enlarged New York: The Journal of Nervous and Mental Disease Publishing Company, 1912. Pp. v-318. (Price, $3.)

To those who are familiar with the earlier editions of this work eulogy of it is superfluous. To others desiring a general survey of the broad subject of psychiatry the book can be recommended as a concise and at the same time comprehensive presentation of it which the frequent revisions, necessitated by the several editions, have kept thoroughly up to date. Of special note are the chapters devoted to the exposition of methods of examination. These include Principles and Methods of Examination, A Minimum Mental Examination, and Binet-Simon Scale, and form a most practical section. One new departure from previous editions is the use of extracts from case histories as illustrations of the descriptive text, a plan which assists the reader to gain a correct idea of personality in relation to the different psychic states, and of the necessity to individualize in the study and treatment of patients affected with abnormal mental processes.

The Surgery of the Stomach. A Handbook of Diagnosis and Treatment. By HERBERT J. PATERSON, M. A., M. C., M. B. (Cantab.), F. R. C. S., London. With Plates. New York: William Wood & Co., 1913. Pp. xiv-312. (Price, $3.50.)

This volume represents the latest word in gastric surgery and is to be recommended to the surgeons or physicians wishing to know the present status of this important subject. Great advances have been made in recent years in the pathology, diagnosis, and surgical treatment of stomach disorders, and there is distinct need of an up to date monograph written by a worker in this field. The author gives the results of his own experience, as well as the views of other masters of the subject. The description of the technic of the various modern operative procedures is clear and concise, and the illustrations of the various steps are excellent. The chapter on the physiological effects of gastrojejunostomy is particularly instructive, and the theories expressed are original and the practical deductions important. One misses, however, a discussion of the effect of an open pylorus after gastrojejunostomy upon digestion and drainage. This point is of the utmost importance and is receiving much attention at the present time. The various complications of gastric ulcer are described in minute detail, and the treatment outlined in a clear and forcible way. The whole book bears the mark of authority, and one feels that it is based on intimate knowledge and broad practical experience. The volume deserves a warm reception among surgical practitioners in this country, not only on account of its intrinsic worth, but also because of the generous acknowledgment by the author of America's great achievements in abdominal surgery and his dedication of the book to one of our leading abdominal surgeons, William J. Mayo.

Medical Laboratory Methods and Tests. By HERBERT FRENCH, M. A., M. D., F. R. C. P., Assistant Physician, Guy's Hospital, London, etc. Third Edition. Chicago: Chicago Medical Book Company, 1912. Pp. viii-202. (Price, $1.50.)

This little work, according to the author, has for its object a consideration of "chemical and microscopical methods that are of established value in clinical medicine." In this sense we know of no book of its size which contains so much really valuable information. Necessarily, in a pocket manual, a work designed especially for the family physician, no reference is made to the more technical and complex methods of analysis. One disadvantage it possesses to the American student, not an unsurmountable one, to be sure, is the reference to British pharmacopeial strengths of the various solutions used. For instance, in the test for pepsin hydrochloric acid (B. P.) is given. In describing tests for the determination of acidity, the author recommends that 100 c. c. of strained vomit be used in estimating the total acidity, and, again, 100 c. c. in a quantitative estimation of free HCl. This presupposes a rather large amount, and after the test meal it is only rarely that one can lift more than 125 c. c., only a portion of which is fluid. It is not necessary to use over five or at most ten c. c. of filtered contents for the determination of these tests. No reference is made to the alizarin test for free acid and acid salts, without which it is not possible to determine the combined HCl or the organic acid and acid salts. These are sometimes of distinct value in a diagnostic sense. Chapters IX and XI, respectively, deal in a brief way with the "preservation and staining of morbid anatomy specimens" and "tests for the commoner poisons." The former of these might have been omitted, as the time necessary for carrying them out is not given to the practising doctor. The work is well illustrated, and should find considerable favor among those for whom it is especially designed.

Meetings of Local Medical Societies.

MONDAY, *June 2d.*—Brooklyn Hospital Club; German Medical Society of the City of New York; Utica Medical Library Association; Hornell Medical and Surgical Association; Roswell Park Medical Club, Buffalo; Nigara Falls Academy of Medicine; Practitioners' Club, Newark, N. J.; Hartford, Conn., Medical Society.

TUESDAY, *June 3d.*—Clinical Society of the West Side German Dispensary and School for Clinical Medicine; Lockport Academy of Medicine; Syracuse Academy of Medicine; Buffalo Academy of Medicine (Section in Surgery); Ogdensburgh Medical Association; Oswego Academy of Medicine; Hudson County, N. J., Medical Association; Bridgeport, Conn., Medical Association.

WEDNESDAY, *June 4th.*—Bronx Medical Association; Society of Alumni of Bellevue Hospital (annual); Harlem Medical Association (annual); Elmira Academy of Medicine.

THURSDAY, *June 5th.*—Brooklyn Surgical Society; Practitioners' Club, Buffalo; Geneva Medical Society; Dansville Medical Association.

FRIDAY, *June 6th.*—Gynecological Society, Brooklyn; Manhattan Dermatological Society; Corning Medical Association.

Official News.

United States Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers serving in the United States Public Health Service for the seven days ending May 31, 1913:

Carmelia, Francis A., Assistant Surgeon. Directed to proceed to Ellis Island, N. Y., and report to the chief medical officer for duty. **Eagle,** J. M., Surgeon. Relieved from duty at Portland, Me., quarantine station and directed to report to the director of the Hygienic Laboratory for instruction in the examination of vaccines and antitoxines. **Ebert,** Harvey G., Passed Assistant Surgeon. Relieved from duty at the immigration station, San Francisco, Cal., and directed to proceed to Astoria, Ore., and assume charge of the quarantine service at that port; granted one month's leave of absence en route to station. **Foster,** A. D., Passed Assistant Surgeon. Granted one month's leave of absence, from June 16, 1913. **Grimm,** R. M., Assistant Surgeon. Directed to proceed to Belfast, Ga., to make an inspection of the vessels and crew of the British schooner *Lady of Avon.* **Grubbs,** S. B., Surgeon. Detailed to represent the service at the annual meeting of the National Association for the Study and Prevention of Tuberculosis, May 8th and 9th. **Hooper,** Lionel E., Assistant Surgeon. Directed to proceed to San Francisco, Cal., and report to the medical officer in charge of the Angel Island Quarantine Station, for duty and assignment to quarters. **Jenkins,** Luther W., Assistant Surgeon. Directed to proceed to San Francisco, Cal., and report to the medical officer in charge of the immigration station, for duty. **Mathewson,** H. S., Surgeon. Relieved from duty at Milwaukee, Wis., and directed to proceed to Portland, Me., and assume charge of the quarantine service at that port. **Mullan,** E. H., Passed Assistant Surgeon. Granted one month's leave of absence from June 1, 1913. **Neill,** M. H., Assistant Surgeon. Relieved from duty at the Marine Hospital, Boston, Mass., and directed to report to the director of the Hygienic Laboratory for duty. **Paine,** Liston, Assistant Surgeon. Directed to proceed to Boston, Mass., and report to the medical officer in charge of the Marine Hospital for duty and assignment to quarters. **Safford,** M. V., Assistant Surgeon. Assigned to duty in the medical examination of arriving aliens at Boston, Mass. **Scott,** Ernest W., Assistant Surgeon. Directed to proceed to Ellis Island, N. Y., and report to the chief medical officer for duty. **Sprague,** E. K., Surgeon. Granted one month's leave of absence, from July 1, 1913. **Watson,** H. J., Acting Assistant Surgeon. Granted thirty days' leave of absence from February 14, 1913, and fourteen days' extension of annual leave on account of sickness from March 16, 1913. **Wilson,** R. L., Passed Assistant Surgeon. Detailed to represent the service at the Pure Food and Health Exposition and Municipal Sanitary Congress to be held at Greenville, S. C., May 19th to 24th.

Board Convened.

Board of medical officers convened to meet at Honolulu, Hawaii, upon the call of the chairman, for the physical examination of Assistant Surgeon Charles M. Fauntleroy and the presentation of questions for the written examination to determine his fitness for promotion to the rank of passed assistant surgeon. Detail for the board: Surgeon Frederick E. Trotter, chairman; Passed Assistant Surgeon E. R. Marshall, recorder.

United States Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending May 24, 1913:

Bratton, T. S., Major. Relieved from duty in the Philippine Islands and will sail for the United States about September 15, 1913. **Brown,** Ira C., First Lieutenant, Medical Reserve Corps. Will report to the medical superintendent of the Army Transport Service, Fort Lawton, Wash., for assignment to duty as transport surgeon on the transport *Dix*, for the trip to the Philippines and return, about June 7, 1913. **Ekwurzel,** George M., Major. Ordered to Gettysburg summer camp for instruction of students, from July 7th to August 15th, and will then return to station. **Fauntleroy,** P. C., Major. Reported for duty at Fort Monroe, Va., on May 15th. **Glennan,** James D., Lieutenant Colonel. Relieved from duty at the Letterman General Hospital, Presidio of San Francisco, Cal., about July 1st, and will report to the governor, United States Soldiers' Home, Washington, D. C., for duty. **Kennedy,** J. S., First Lieutenant, Medical Reserve Corps. Arrived at camp, Waco, Georgia, from Fort McPherson, on May 17th. **Lyster,** W. J. L., Major. Left Fort Oglethorpe, Ga., on May 18th, to camp at Franklin, Tenn. **Reynolds,** F. P., Lieutenant Colonel. Relinquished leave of absence and left Elmira, N. Y., on May 24th, en route to San Francisco, Cal., and Hawaii. **Van Kirk,** H. H., First Lieutenant. Assigned to duty at the Presidio of Monterey, Cal. **Worthington,** J. A., Captain. Arrived at Fort Baker, Cal., on May 15th, for temporary duty.

United States Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending May 24, 1913:

Allen, D. G., Assistant Surgeon. Ordered to duty at the Naval Hospital, Newport, R. I. **Curtis,** E. E., Passed Assistant Surgeon Detached from the *Supply* and ordered to the Naval Station, Guam. **Dessez,** P. T., Passed Assistant Surgeon. Detached from the *Tonopah* and ordered to the *Castine.* **Eytinge,** E. O. J., Passed Assistant Surgeon. Detached from the Naval Station, Guam, and ordered to the *Supply.* **Pleadwell,** F. L., Surgeon. Detached from the *North Dakota* and ordered to the Naval Medical School, Washington, D. C. **Pryor,** J. C., Surgeon. Detached from the Naval Medical School, Washington, D. C., on June 1st, and ordered to the *North Dakota.* **Stone,** E. P., Medical Inspector. Detached from the Navy Recruiting Station, Denver, and granted sick leave. **Warner,** R. A, Passed Assistant Surgeon. Ordered to the Naval Hospital, Washington, D. C., for temporary duty.

Births, Marriages, and Deaths.

Married.

Badt—Glenn.—In Fort Worth, Tex., on Thursday, May 8th, Dr. Morris B. Badt and Miss Mabel Glenn. **Glenn—Weaver.**—In Philadelphia, on Tuesday, May 20th, Dr. Robert A. Glenn and Miss Myrtle Weaver. **Hildreth—Whitaker.**—In New York, on Thursday, May 22d, Dr. Warren Hildreth and Miss Kathleen Whitaker **Plunkett—Lewis.**—In Lauderdale, Va., on Monday, May 12th, Dr. Flavius O. Plunkett, of Lynchburg, and Miss Ruth Lewis.

Died.

Brown.—In Philadelphia, on Friday, May 23d, Dr. Elmer E. Brown, aged fifty-three years. **Carson.**—In Port Deposit, Md., on Wednesday, May 14th, Dr. William Cowan Carson, aged eighty years. **Cowles.**—In Rochester, N. Y., on Tuesday, May 13th, Dr. James B. Cowles, aged eighty-nine years. **Eaton.**—In Belgrade, Mo., on Tuesday, May 6th, Dr. Jesse A. Eaton, aged sixty-nine years. **Engleman.**—In Easton, Pa., on Wednesday, May 14th, Dr. David Engleman, aged seventy-seven years. **Charles.**—In New York, on Wednesday, May 21st, Dr. Frank Charles, aged sixty years. **Keener.**—In St. Joseph, Mo., on Monday, May 12th, Dr. H. N. Keener, aged seventy-one years. **LeBeuf.**—In Pass Christian, La., on Monday, May 5th, Dr. Louis G. LeBeuf, aged forty-seven years. **McIntosh.**—In Covington, Tenn., on Sunday, May 4th, Dr. J. S. McIntosh, aged seventy-seven years. **Nelson.**—In New York, on Wednesday, May 21st, D. J. De Witt Nelson, aged sixty-four years. **Ogden.**—In Chicago, on Wednesday, May 14th, Dr. E. Russell Ogden, aged fifty-one years. **Peers.**—In Topeka, Kansas, on Monday, May 12th, Dr. T. W. Peers, aged fifty-seven years. **Phares.**—In St. Paul, Minn., on Sunday, May 11th, Dr. George W. Phares, Sr., aged seventy-six years. **Tomlinson.**—In Philadelphia, on Sunday, May 18th, Dr. Joseph Tomlinson, of Bridgeton, N. J., aged fifty-nine years. **Wocher.**—In Cincinnati, on Thursday, May 15th, Dr. Charles F. Wocher, aged fifty-six years.

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Original Communications.

THE UNCONSCIOUS FACTORS IN THE NEUROSES.*

By A. A. BRILL, PH. B., M. D.,
New York,
Chief of Clinic of Psychiatry, and Clinical Assistant of Neurology, Columbia University.

One of the rules that I invariably follow in my psychanalytic work is not to analyze the patient's dreams until I am fairly well acquainted with the "lay of the land" of his mental makeup. Dream analyses require the full cooperation of the dreamer. He must conceal absolutely nothing that enters into his consciousness during the analysis and be ready to answer all questions put to him. It often happens that I hear dreams that could be analyzed without any assistance, but as a rule it is impossible to get at all the facts without the dreamer's help. To obtain this, one must have the patient's confidence, there must be some rapport between patient and doctor, and it usually takes a few weeks before this is established. Now and then, however, one is forced to make an exception, and rarely it is even necessary to utilize dream analysis to bring about this rapport. It is of such an experience that I am about to speak.

A very brilliant but rather skeptical woman of thirty-six years—she was a doctor's daughter—was referred to me for psychanalytic treatment because of a very severe neurosis from which she had been suffering over fifteen years. She soon learned from friends and acquaintances that I was a dream interpreter, and was anxiously waiting to find out the meaning of her dreams. At my request she brought me dreams every day, but I refused to tell her their meaning. She then sought information from the literature and, contrary to my wishes, read my translation of Freud's selected papers on hysteria. One morning she brought the following dream: "I was with a crowd of people, and we wanted to pick some flowers, or rather wanted to steal them. We came to a garden and I saw beautiful flowers. I was about to steal some when suddenly I descried a man looking out of a window. Fearing that I was detected, I asked him whether I could pick some flowers. He jumped up and cried, 'Now I know who has been stealing all these flowers.' I was frightened, started to run away, and awoke."

When she finished reciting the dream she teasingly demanded its meaning, and when I reminded her that I did not analyze dreams for the first few weeks she mockingly accused me of not knowing what the dream meant and harassed me with the question, "What does it mean to pick flowers in a dream?" until I was forced to take up the analysis. When I asked her to focus her attention on the dream and repeat her thoughts she insisted that nothing came to her mind. This answer, "Nothing comes to my mind," is often heard from beginners who are not accustomed to "continuous associations,"[1] from people who are impeded by conscious or unconscious resistances, and, last but not least, one hears this answer where the element of the dream refers to a symbolic expression. In the last case the meaning is found in the symbol or double meaning expressed in the element of the dream. It did not take me long to decide that we dealt here with the last theory, and the meaning of the dream soon became clear to me. As a prologue to the interpretation I shall relate the following facts: As I said above, I was aware that the patient had read Professor Freud's book, and when she kept on hurling at me the question of flower picking in the dream some passages in the book flashed through my mind. These passages deal with the mechanism of the therapeutic effects of the psychoneuroses. Thus, we are told that the "psychoneuroses are distorted substitutive gratifications of impulses the existence of which one must deny to himself and to others"; that "their capacity to exist rests on the distortion and misjudgment"; and that with the solution of the riddle they present, and with the acceptance of the solution by the patients, these morbid states, become incapable of existence."[2] In brief, it is asserted that the morbid symptom disappears as soon as psychanalysis discovers its hidden meaning and brings it to the surface. By way of illustration, Freud mentions the fact that the visual hallucination of the Holy Virgin used to be a frequent occurrence among peasant girls, and as long as such a manifestation drew a large crowd of believers, or even resulted in the erection of a chapel over the holy shrine, the visionary state of these girls remained inaccessible to suggestion. To-day even the priesthood has changed its attitude toward such manifestations. They allow the doctor and the policeman to take charge of the visionary girl, and consequently the Holy Virgin seldom reveals herself nowadays. To illustrate further, he says,

*Read before the Section in Psychiatry and Neurology of the New York Academy of Medicine, March 11, 1913.

[1]For the technic of dream analysis see Freud: *The Interpretation of Dreams*, New York and London.

[2]Selected papers on Hysteria translated by A. A. Brill, second edition, p. 213.

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"Let us assume that a circle of ladies and gentlemen of good breeding have agreed upon making a day's excursion to some country place. The ladies have decided among themselves that if one of them should desire to satisfy a natural want she was to say aloud that she was going to pick some flowers. But a mischievous joker discovered this secret and put on the printed programme sent to those invited: If the ladies wish to ease Nature they should say that they are going to pick flowers. Of course, none of the ladies would then wish to make use of this covert allusion, and this also made impossible the use of a similar formula." These quotations from Freud's book came to my mind and, as you can see, furnished the key to the dream. However, to verify my assumption, I ascertained that she had finished reading the book the evening before the dream. I might add that the passages cited are from the last two pages of the book. She saw no connection between my questions and her dream, but took my "irrelevant questioning" as further evidence of my ignorance of dream analysis. I was inquisitive to know whether she would discover the connection between the dream and the story in the book, but despite all my leading up to it, I was finally forced to call her attention to it. This was followed by a mingled reaction of shame and laughter, lasting for a few moments and ending by her remarking, "And shall I add that I took a dose of calomel before retiring, and was awakened by it."

Now, let us consider the psychological principles that gave rise to this dream. On the day preceding the dream I had a long discussion with the patient about certain sexual experiences of her life. She refused to give me any information beyond what her physician wrote to me. Although married for years and the mother of a few children, she looked upon sex with the greatest disgust. The very word was disagreeable and nauseous to her. From her physician I learned that for some time after marriage she evinced an abhorrence to any intimate relations with her husband. Later she became more tolerant, but always became hysterical over it, and always expressed her disgust for it. In brief, she was a marked *natura frigida,* and evinced a typical infantile sexuality. She had an enormous craving for affection, and loved to be fondled and petted by her husband, but stated that she would be perfectly happy in her married life if only sex would not come in. When I tried to have her go into details about a definite phase of her history she refused to do so because it touched upon sex. She made a great many efforts, but I saw that she really could not continue. I anticipated some of her thoughts and told them to her. She was very much impressed and remarked, "Why don't you tell me everything if you know it? I wish you would talk, instead of asking me questions." I retorted that it was necessary that she should do the talking herself. She agreed to do so the next day, as our session was then at an end. It was shortly after she left me that she read the part of the book which I have cited.

What were the psychological mechanisms that entered into the formation of this dream? When the patient left me she debated with herself whether or not to reveal to me what she called the disagreeable part of herself. She reflected over some of the thoughts that she would have to disclose and could not make up her mind to tell them. This struggle continued throughout the day, but now and then it was crowded out from consciousness by other thoughts. On falling asleep this stream of thought, endowed with so much interest, though dulled by the desire to sleep, nevertheless retained some of its activity. Experience in dream analysis teaches that in order to form a dream the stream of thought in question must succeed in arousing and in forming a connection with one of the unconscious repressed tendencies from childhood. It is through this reinforced energy that this stream of thought, or day remnant, attains sufficient force to reach consciousness in the form of a dream. The patient's dream was the expression of the wish to disclose to me that part of herself which was under very strong repression and suppression. The determinant of the dream was the conflict of the previous day about her hidden sexuality, which continued its activity during sleep and aroused any number of associations from early life. Once the connection was formed, the thoughts obtruded themselves upon consciousness, as in the dream. But the vigilance of the psychic censor is plainly visible. The story she had read the day before impressed her very much because it showed the futility and ridiculousness of prudishness, and because it expressed the identical ideas that entered into our discussion. The dream therefore makes use of the beautiful formula "to pick flowers" in order to hide a contrast idea to ease Nature. As I said before, our patient was altogether infantile in her sexuality. She knew absolutely nothing of adult sexuality when she married. She made no distinction between the vagina and anus (Freud's cloaca theory); both were equally tabooed. Hence to ease Nature was equivalent to a sexual act. The allusion in the dream to something immoral and forbidden is nicely expressed by the fact that she was not merely going to pick flowers, but to steal them. The man in the dream was myself; I discovered her sexuality, and it was from me that she was trying to run away. At the same time this expresses the wish to be detected and seen, which goes back to the wish expressed the day before that I should tell her all there was to be known of sex, and not ask her any questions, and to a marked childhood exhibitionism and immorality which later gave the reaction of extreme bashfulness and prudery. I might add that this dream nicely illustrates the part played by an organic stimulus. When the patient first told me the dream she purposely omitted that she was awakened by the griping of the calomel and had to empty her bowels. It was only after I called her attention to the meaning of flower picking that she corroborated my interpretation by telling me the part played by the dose of calomel. As can be seen, there was an effort to render harmless the stimulus, the griping, as a sleep disturber. This is always the case in all the so called convenience or laziness dreams[3] where the sensory stimuli are taken up by the dream and woven into a wish. As a rule, however, such dreams are undisguised. Here the disguise was essential and followed the

[3] *The Interpretation of Dreams,* p. 104.

tendencies of the patient's mental makeup. The consciousness of the real meaning of the dream would have been very disagreeable, and throughout her whole life she was accustomed to invest everything with a poetic atmosphere.

Bearing in mind that the dream and its interpretation, it may be said that the different stages of the whole process were the following: 1. A mental stream produced during the day; 2, a subsequent forgetfulness of the same; and, 3, its reappearance in consciousness in a disguise form in the dream. The last stage, the dream, is totally foreign or, we may say in meaning, unconscious to the patient. In other words, the original thoughts or impressions underwent a certain change before they reappeared in the dream, and the only way to find their meaning was by comparing them with the latent thoughts. The latter, though unconscious to the patient, were nevertheless the active elements of the dream. This mechanism shows the striking analogy to the so called "posthypnotic suggestions." As we know, Bernheim and others do this experiment in the following manner: A person is hypnotized and while in this state ordered by the doctor to perform a certain task at the expiration of a certain time after awakening. He is then awakened and is in normal condition; he has no recollection of his hypnotic state; and yet at the appointed time he is seized with an impulse to perform the task assigned to him and he does it consciously and rationally without knowing why. When questioned about it he usually finds some excuse for his action. Here it must be said that the order had been present in the mind of the person in a latent or unconscious state until the designated time, and then suddenly merged to consciousness. In normal life this is noticed in such actions as mailing letters, etc. It is to be noted that not everything comes to the surface. Thus the command, the influence of the doctor, the recollection of the hypnotic state, remain unconscious—all that is remembered is the idea of the act to be performed. Moreover, the idea of the action ordered in the hypnotic state not only becomes conscious at a given time, but it also becomes active as soon as it reaches consciousness. But as the real stimulus to the action was the order of the physician, it must be conceded that the idea of the physician's order became active, too. But as it remains unconscious we are justified in saying that it was active and unconscious at the same time.[4]

The fact of posthypnotic suggestions finds full corroboration in the works of Pierre Janet, Breuer and Freud, Morton Prince, and others. All these investigators found that hysterical patients evince many active yet unconscious mechanisms. This has been especially demonstrated by Freud and his school. In our psychanalytic work we always find that the psychoneurotic symptoms are governed by motives of which the patient is entirely unconscious. Thus I have reported two patients who went through major and minor hysterical attacks, lasting from a few hours to days, which on analysis proved to be unconscious reactions to former erotic experiences and episodes.[5] Such patients prove with complete certainty the existence of an unconscious activity which is made up of infantile erotic wish feelings which experienced repression during the developmental period of childhood. In all cases fully analyzed one finds an infantile stage evincing a polymorphous perverse sexuality, a repression or emotional transformation during the developmental period of childhood—a return and a revival of the latter, either as a consequence of the sexual constitution or in consequence of unfavorable influences of the sexual life. To illustrate such unconscious activity I will cite the following case:

J. L., thirty-three years old, single, drug salesman, was referred to me for treatment by Dr. Beverly R. Tucker, in the beginning of April, 1911. The patient had been an active sufferer since 1904, the main symptom being a mysophobia. A letter written by Doctor Tucker reads: "About five years ago he got into the habit of washing his hands very frequently. This dirt phobia has expanded until now he is afraid to touch almost anything for fear of transmitting poison or filth in an infinitesimal amount to himself or some other person." The patient was almost entirely incapacitated by his neurosis. He could no nothing without getting into trouble. He was afraid to touch anything that had any dust on it. If he noticed spots on his clothes he immediately washed his hands over and over again because he imagined that he had touched them. He would get into a state of excitement over it which manifested itself in anxiety and perspiration. His hands were almost always wet with perspiration. He was especially worried by poisons, and, having been a drug salesman, he saw poison in everything. Thus he did not use a match for years because matches contain phosphorus or sulphur. When he wanted to light a cigar he always managed to do it in some other way. Usually he went into cigar stores, where one can always find a cigar lighter. When a box of matches was left in his room he became very much excited over it, asked the maid to remove it, and had the spot scrubbed and cleaned. On the other hand, he carried in his pocket a silver matchbox containing matches which he never used, and which was a constant source for new phobias. His phobia for odors was just as marked. When he first came to New York he lived in a hotel, and on entering his room one afternoon he perceived a peculiar odor. He inquired about it and was told that the floors were cleaned with some preparation containing carbolic acid. This caused him to leave the hotel; he was in fear lest his coat might have touched the floor, taken up some of the poison, and transmitted it to others. He was afraid to pass certain sides of the street because he noticed a paint shop there; paint suggested lead, which he knew was a poison. He would not touch any metallic door knob because it might contain some "canker" which he thought was especially poisonous—by canker he meant the greenish substance one often finds on exposed metals. It was for this reason, too, that he found it hard to drink water coming from the hydrant. These are only a few of the main phobias which constantly obsessed the patient. Here I simply wish to point out the various stages in the development of this mysophobia, tracing it throughout the patient's life.

It was during the analysis of psychoneurotics that Freud's attention was first called to dreams, the psychology of which he has later studied and developed. At present, however, it may be asserted that psychanalysis is founded upon the analysis of dreams, as dream analysis is the most finished part of psychanalytic investigation. It was for that reason that I began with the analysis of a dream when I wished to demonstrate the unconscious elements in the neuroses. Like the dream, these phobias seem absurd and strange to the patient and the outsider; yet, as in the dream, the enigmatic absurdities and the exaggerated emotions disappear as soon as the analysis is completed.

Starting therefore with the formula that "the neurosis

[4]Freud: A Note on the Unconscious in Psychoanalysis; the *Society for Psychic Research*, Part lxvi, Vol. xxiv.

[5]Brill: *Psychanalysis, Its Theory and Application*, pp. 220-225.

[6]Freud: *Three Contributions to the Sexual Theory*, p. 38.

is, so to speak, the negative of the perversion,"[6] I investigated the patient's infantile life. I shall mention here only those elements that are absolutely essential to explain the phobia. I found that the patient's childhood was characterized by the usual polymorphous perverse sexuality, but that instead of undergoing the usual repression, it continued throughout the whole latency period. From his early childhood he displayed a very strong aggressive activity in his sexual life. As far as he could recall, he indulged in sexual looking, despite frequent punishment. He displayed a strong desire for coprophilic activities. He took an unusual interest in feces and urine, he liked the odor of water closets, and one of his favorite indulgences was to put his finger between his sweating toes and then smell them. He was often punished for these acts by both parents, and especially his father. He began to masturbate long before the age of puberty, and his first love affair began between ten and eleven. In brief, there was no latency period to speak of—all the infantile activities were continued to adult life, with only little conflict. From fourteen to fifteen he began to be troubled with all sorts of religious and moral conflicts, and he also became very neat in his appearance. He led what he called a pure life in every way until the age of nineteen, when he consorted with a prostitute. This was followed by many reproaches, so that he had very few such experiences thereafter. His neurosis really began at the age of twenty-one, when he was very scrupulous, very moral, and very conscientious. I may add that throughout his whole life he evinced a very strong attachment for his mother. Whatever he did was for his mother; he was guided entirely by her wishes. For his father, who died when he was about fourteen, he entertained absolutely no regard; on the contrary he talked about him in a contemptuous manner.

To translate what has been found into psychanalytic language, we may say that so far we have an individual of normal makeup whose early sexual activities were accentuated to an extent that there was hardly any latency period as one finds normally. This was followed by a correspondingly strong suppression and repression in adult life, and resulted in a more or less inhibited life, owing to his incapacity to sublimate properly. This maladjustment was shown in a great many ways. When his father died he left a wholesale and retail drug store, the management of which he later undertook. He always disliked the drug business, and had it not been for his duty to his mother he would have taken up something else. His mother was aware of his feelings, and urged him to adopt some other occupation. He made many attempts and obtained good positions in which he "made good," but always had to return home and resume his old work. "I felt that I owed it to my mother; it was my love for her that made me give up everything else," he said when discussing this. His love and regard for his mother was enhanced by the fact that she was ailing much of the time and because she had a great deal of trouble with the other children. Thus, his older brother, to whom he had looked up when young, turned out to be the black sheep of the family. He was a drunkard and guilty of theft, bigamy, and desertion from the army. To add more mortification for his mother, two of his sisters eloped; so that he, always having been his mother's favorite, was her only consolation. She continually urged him not to be like his brother. He promised her everything and tried to live up to his promises. He got along fairly well until the following episode took place. In 1899 he made the acquaintance of a woman who tempted him, and in a moment of passion he once touched her vulva. He was immediately seized with remorse and fear. He thought that he had committed a terrible crime against his mother. He had the impulse to go and explain everything to her and ask her forgiveness, but could not make up his mind to do it. Whenever he was ready to make the confession he thought of the great worry that it would cause her, and so refrained from doing it.

For a period of about five years he apparently suffered from a mild mixed neurosis. He was obsessed by the idea that he might be shot by this woman's father or brother for having insulted her, and showed many other neurotic symptoms. His mother's condition grew worse, as she had cancer of the liver; and he was with her a great deal. During the last days of her life she often admonished him to lead a clean, upright life. It was shortly before she died, in 1904, that he began to show the hand washing mania which expanded later into the other phobias. What happened was this: The sexual libido, active during childhood and adult life, was suddenly repressed. Now and then there was an attempt at readjustment of his libido through some erotic experience in the form of a love affair or gross sexual experience. Occasionally he would go out with his friends and drink and carouse. Such experiences were always followed by terrible reproaches, as they were incompatible with his religious and ethical training, inculcated by his mother. Continuing in the drug business despite his dislike for it, he was unable to sublimate his sex energy on something higher. All his libido was therefore centered on his mother; she was his ideal in every respect, the only person he could love. All his attempted love affairs turned out failures. The high tide of libido which became detached with his mother's death therefore caused a regressive revival of his autoerotic sexuality.[7] He could find no outlet elsewhere; hence he had to resort to himself. But as his autoerotic sexuality dealt with coprophilic activities which were entirely incompatible with his present ego, they had to manifest themselves in a negative form. Had they returned in their original form he would have suffered from perversions. The motive power of the phobia was therefore the repressed libido, while the determinants were furnished by actual occurrences at the time of the onset. Thus, the hand washing signified a moral stain, and was determined by the touching of the vulva. The usual generalization then took place, and the patient feared all stains, and, by a form of rationalization (as fitly expressed by Doctor Jones), he thought that he feared the stains because they represented drugs and poisons. The phobia for "canker" appeared after his mother died, and was simply a sound association of cancer. The immediate onset of the symptoms was probably helped by the fact that for days before she died his mother's stools were very offensive.

The morbid gain of the disease was two fold. First, it served as a sexual gratification and represented some components of his sexual life;[8] second, it took him away from the occupation he disliked.

These analyses serve to show the part played by the unconscious activity in the neuroses; they amply demonstrate the futility of the old *Anschauungen* in the examination and treatment of the psychoneuroses. This patient was treated for years by the orthodox methods. He received his share of medicines and rest cures at home and in sanatoriums without the slightest improvement. He was with me about five months when I discharged him as cured. I had the pleasure of seeing Doctor Tucker during his recent visit to New York, and I was gratified to hear that the patient was perfectly well. Last January the patient himself paid me a social visit while here on business. I found him to be in perfect health, showing absolutely no trace of his former trouble. While talking to me he remarked that he was no longer in the drug business, and for the moment I was somewhat shocked; but he anticipated my thoughts and laughingly said, "No, it was not on account of phobias that I gave it up. I did not dare give it up while I was sick, but since getting well I thought I could do much better in some other business, and I finally found something that is much more lucrative than selling drugs." I was both surprised and interested to hear that he was selling perfumes—a compromise formation serving a useful purpose which throws some light on the psychology of trade selection. (Cf. Brill *l. c.*, p. 208.)

Now, I have been asked repeatedly how psychanalysis cures. The last questioner argued: "Suppose I grant you that this means that and that that means this; how is the patient cured?" To answer this question I related a story which I shall here repeat. A German professor of astronomy invited his colleagues to take luncheon with him. After the cigars were served he asked them to accompany him to his garden, of which he was very proud. In European gardens one often sees hollow iridescent glass globes placed on sticks between the bushes.

[6] Cf. Brill, *loc. cit.*, pp. 172 and 184.

[8] Freud: *Selected Papers*, p. 198.

While walking, one of the guests, a professor of physics, happened to touch one of these globes and was surprised to find it very hot. What puzzled him was the fact that the heat was not on the side heated by the sun, but on the opposite side. On touching the other side he found it comparatively cool. He called his colleagues' attention to this phenomenon and asked them to explain it. The discussion that followed first became very animated and then even personal. As soon as one offered a theory it was disproved by the others. Not one of these learned men could explain this phenomenon. While they were thus quarrelling the gardener approached unobserved, and, upon discovering the dispute, turned to the host and said: "Professor, just before you came here with the gentlemen, I turned the globe around. I do this every day at this time."

Of course, the arguments and quarrels ceased in a trice; there was nothing left to dispute about. Had the gardener not made his appearance, would these learned men have ever settled the problem? Surely not. The energy that they were trying so hard to explain away did not belong there—it was displaced. We may say the same of the phobias and obsessions, the exaggerated affect is justified in its right place, but it does not belong to the symptom. The gardener has turned the globe around.

55 Central Park West.

GALLSTONES PRODUCING PYLORIC AND JEJUNAL OBSTRUCTION.*

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Intestinal obstruction may occur when gallstones having a greater diameter than two centimetres enter the small bowel. Much larger gallstones pass into the large intestine without producing obstruction. Gallstones of sufficient size to produce intestinal obstruction are, as a rule, too large to pass through the biliary ducts without some ulcerative or perforative process. It is rare to find a dilated communis with a greater lumen than one centimetre, and, in conjunction with such dilatation of the duct, a marked distal narrowing, usually situated in the region of the head of the pancreas or in the wall of the duodenum, will be found. It is obvious, therefore, that large gallstones may enter the intestinal tract in one of three ways:

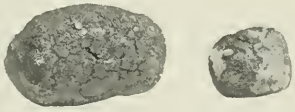
First, they may gradually erode their way through the cysticus and the communis by a combination of proximal and circumferential dilatation and distal pressure necrosis and ulceration.

Second, the duct or gallbladder containing the calculus may become adherent to an adjacent portion of the stomach or bowel, and a direct perforation occur with the transference of the stone from the biliary to the gastrointestinal canal.

Third, the stone may perforate the gallbladder or duct, and be received into a cavity of inflammatory formation, and from this cavity or abscess the stone may then perforate the wall of one of the hollow organs of the abdomen. In this way the gallstone may enter the stomach, the small intestine, colon, or rarely some other viscus, as the urinary bladder.

Gallstones, when in the general abdominal cavity, share the property of other harsh foreign substances of tending to penetrate adjacent hollow viscera. Thus it is the tendency for metallic instruments, towels, gauze, sponges, and similar objects left within the abdominal cavity, by ulceration and perforation, to enter an adjacent hollow viscus. Sea sponges, on the other hand, do not, as a rule, cause such perforative types of ulceration. Not infrequently the foreign bodies that have passed from the general peritoneal cavity into the intestine are eventually expelled from the body, this constituting apparently Nature's method of freeing the general abdominal cavity of large foreign substances. Intestinal obstruction from gallstones is unusual, and, as would be expected, usually occurs in elderly women who have long suffered from gallstone "dyspepsia."

The two gallstones, herewith presented, represent the only instances in which I have had personal knowledge of intestinal obstruction from gallstones. The larger stone was removed from Mrs. S. S., an obese German woman of sixty-five years. Her family and previous history were unimportant, except that she had had a large umbilical hernia for nearly thirty years and had also suffered from indigestion for many years. In December, 1909, I was asked to see the patient by Dr. F. S. Bower, and found the sac of the umbilical hernia distended to the size of a child's head by foul smelling pus and gas. On incising the thinned integument, possibly a quart of pus escaped. Following this the discharge of pus continued, but some weeks later it was found that food, shortly after it had been swallowed, also escaped through the umbilical sinus. Later the leakage of food ceased, but there then followed signs of pyloric obstruction. I saw the patient the second time, three and one half months after opening the umbilical abscess, when she was brought to the Samaritan Hospital with a weak and rapid pulse and subnormal temperature; the collapse that had followed pyloric obstruction of five or six days' duration. The sinus had spontaneously closed for one week, reopening the day before the patient entered the hospital. Although the patient seemed almost beyond surgical aid, an operation was done under spinal anesthesia. On exploration of the sinus, it was found to lead to a perforation in the anterior wall of the atrium of the stomach. Immediately below the pyloric ring was an enormous obstructing gallstone, which was pulled back into the stomach and removed, after enlarging the sinus. The patient died twenty-four hours after the operation. The removed gallstone was oval, six and one half centimetres in length and four centimetres in diameter.



a. *b.*

a, Gallstone, 6.5x4 cm. in diameter, removed from the pyloric ring and first portion of the duodenum. Half size.
b. Gallstone, 3.1x3.5 cm. in diameter, removed from the jejunum. Half size.

The second gallstone was removed from Mrs.

*Read before the Pathological Society, May 23, 1912.

L. F., who was sixty-four years of age and had had typhoid fever at twenty-one. Twelve years ago the patient was in bed five weeks, with gastric pain, vomiting, and eructations. Three months later another attack occurred, and thereafter attacks followed indiscretions in diet. During the last eighteen months she had been in bed six times, and during the summer of 1911 was in bed sixteen weeks, and she had had almost continuous pyrosis and epigastric pain. On the 22nd of December, 1911, the patient was taken with severe cramplike pain in the epigastrium, followed by vomiting and eructation of gas. The pain soon became generalized and the vomiting fecal in character. All efforts to move the bowels failed after December 20th. On the evening of December 24th, I first saw the patient, also with Dr. F. S. Bower, and had her transferred to the Samaritan Hospital. Under spinal anesthesia the abdomen was opened, and a coil of small intestine to the right of the median line was found distended by the stone. This was removed by a transverse intestinal incision, and the wounds closed without drainage. The patient recovered from the obstructive symptoms, and later from the pyrosis and other digestive disorders. The removed calculus was slightly oval, and measured 3.1 centimetres in length and three and one half centimetres in diameter.

2033 WALNUT STREET.

CHANGES IN THE TREATMENT OF SYPHILIS.*

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The phenomenal advances made during the last ten years in our knowledge of syphilis have naturally modified both the diagnosis and treatment of the disease. Some of the discoveries, such as the recognition of the direct dependence of paresis and tabes on the infection, have not as yet led to any practical results in the direction of the ultimate aim of all our efforts, the removal of disability and the cure of the disease; but others are of greater practical importance. The discovery of the spirochete has apparently settled the long debated question of the etiology of syphilis, and has given us a new means of recognizing its presence in certain cases; the establishment of the possibility of inoculating apes and other animals with the disease has opened the way for the first time to experimentation along ordinary lines; the Wassermann serum test offers us a new symptom that is especially useful when other signs are doubtful or absent; and, finally, the salvarsan medication gives us a new means of combating the infection None of these discoveries is as yet sufficiently old for us to speak with absolute positiveness about it; this will take at least a generation of experiment and experience. But they have been used long enough now for us to form at least a provisional judgment of their value, and in the light of that judgment to decide how far and in what manner they have influenced the best diagnosis and the most advisable treatment of the disease. The practitioner cannot be expected to go into the minutiæ of the laboratory experimenter or the clinical investigator; he wants in broad general lines the rules of practice to be deduced from their labors; he asks for conclusions from those who have had opportunities to form them; and, above all, on matters of such vital moment to his patients and to himself, he requires calm and deliberate judgments, rather than the enthusiastic utterances of special advocates. I shall consider, as of immediate and practical importance, the spirochete as a means of diagnosis in doubtful cases and the influence of its recognition on the treatment to be employed; the serum test as an element in the recognition of the disease, as an index for treatment, and as a criterion of cure; and, finally, the place occupied by salvarsan, in so far as our present knowledge goes, as a therapeutic agent in the disease.

1. *The spirochete.* In the hands of an expert having at his disposal the dark stage for the living and the various approved staining methods for the dead specific microorganisms, their demonstration is indubitable evidence of the presence of the disease. This is of little importance in the later lesions, where the organisms are often undemonstrable, and where their evidence is rarely required for diagnosis; it is of greater moment in the secondary lesions, especially of those of the mucosæ, in which they are more generally recognizable. But it is in the chancre, the initial lesion, that the spirochete finding has its greatest value. The syphilographer, it is true, can almost always recognize a chancre when he sees one; but even he may make mistakes. In view of the importance of the decision as to infection, the recognized rule in the past has been a conservative one, namely, no matter how like a chancre a single lesion may be, to await the appearance of another definite symptom of the disease before making a positive diagnosis and beginning the treatment. The reason for this was the well known fact that approved antisyphilitic treatment might prevent the appearance of other secondary symptoms, or so mask them that it would always remain uncertain whether the patient was really infected or not. Now the second definite symptom to confirm the diagnosis could not be the earliest one, the local adenopathy; for though this presents certain features that the expert can recognize, it is not sufficiently different from the local adenopathy accompanying a nonsyphilitic lesion to permit of its general recognition. The second indubitable symptom was held to be the roseola, the angina, the cephalalgia, or the general adenopathy that marked the systemic spread of the disease. This meant a wait of from two to four weeks after the appearance of the initial sore; a loss of time that it was hard to make our patients submit to, and which we ourselves regarded as undesirable, but necessary. This has now been changed, since any lesion can be examined for the spirochete, and the required second symptom found or not found at once. The rule, therefore, now is, in the presence of any suspicious

*Read before the Medical Association of the Greater City of New York, April 7, 1913.

lesion on the genitals or elsewhere, to have an immediate spirochete examination made. A positive finding supplies the requisite confirmation of the diagnosis of syphilis, and treatment should be begun at once. A negative finding is necessarily not so conclusive, since various factors may interfere with the recognition of the spirochete; but it is presumptive evidence against the syphilitic nature of the lesion, and is an indication either for another microscopical examination or a wait, if there is still doubt, for the possible appearance of secondary symptoms.

2. *The serum test.* It is to be feared that there is much misapprehension in the profession as to the significance and importance of the Wassermann test and its modifications in the light of our most recent knowledge; showing itself in the tendency to make these laboratory investigations the final and sometimes the only arbiters as to the nature of a given affection. If the serum test is positive, the malady is syphilitic, and *vice versa;* which is by no means the case. The fact is that a positive Wassermann reaction means simply that the blood shows that the patient has had syphilis at some time. The questionable symptoms may or may not be luetic; for a syphilitic, like any one else, may have other diseases. It is evidence, in a large number of cases, of minor weight only; though it is of much importance if other things can be excluded and the available evidence also points to syphilis. If the serum test is negative, its meaning is of still less direct significance; individuals undoubtedly affected with the disease may and do, on occasion, give this result. The serum test may be negative at one time and positive at another, due to factors that are in part known, as to the influence of recent mercurial or arsenical treatment, and in part to others that we are still ignorant of. The serum test does not possess the absolute value that is the property of an undoubted syphilitic lesion, as a mucous patch or a broad condyloma. It is a secondary, a subsidiary symptom of the disease, that may or may not help us in the diagnosis of the condition that we are treating. Its especial value lies in the fact that it is a symptom that we can elicit at will, and in the absence of other signs, or when these latter are inconclusive, it is extremely useful. But it is not, under any circumstances, absolute evidence of the syphilitic nature of a given symptom or set of symptoms, and this those who know most about the Wassermann reaction, the serologists themselves, will readily admit. The serum test, then, not being a pathognomonic sign of the nature of an affection, it is a mistake to rely upon it to the exclusion of other symptoms. The syphilographer requires its evidence for the diagnosis of the disease only in exceptional cases; in the ordinary ones it is entirely unimportant—so unimportant that I have no hesitation in saying that, in the presence of the symptoms usually relied upon for making a diagnosis, it does not matter what the Wasserman test is.

Similar considerations in even greater degree apply to the serum test as a guide for treatment. It was confidently hoped, when the test was first introduced, that it would give us a means of gauging and regulating our therapeutics; but this has been found to be the case only to a limited degree. Syphilitics, after the conclusion of a course of treatment, may show a Wassermann reaction that may be negative once or twice and then become positive again. A negative serum is to some extent an evidence of the success of our treatment, and justifies to that degree a diminution of its intensity and duration; but it cannot be regarded as a safe indicator of the therapeusis required. As a matter of fact, the latest conclusion of the serologists is that in a very large proportion of cases of tertiary syphilis, estimated by some authorities as seventy per cent., it is impossible to render the Wassermann reaction permanently negative, no matter what form of treatment has been employed. Multitudes of these patients are practically well; they have had no symptoms for long, perhaps for indefinite periods; they have infected no one, and they have healthy offspring; yet their blood may show, temporarily or permanently, positive Wassermann reactions. But here, as in the days before serum tests were used, common sense must come to our aid. If, after an appropriate treatment for the length of time that experience has shown to be needed, there are no symptoms, and the blood test remains permanently negative, it is additional evidence of the cure of the disease. If, however, under similar circumstances, the test is still positive, it may, within reasonable limits, be regarded as an indication for more treatment in the attempt to change it; but it is not to be regarded as an absolute negation of a practical cure.

The rules to be deduced, then, from what we know of the serum test to-day, are the following: The Wassermann test when positive is evidence of the existence of syphilis; it is of much less weight as to its absence when negative; and it is of especial value when other evidence is lacking or indeterminate. It shows that a patient has had syphilis at some time; it does not necessarily show that a certain lesion or symptom is or is not syphilitic. In the presence of definite symptoms of the disease it is of little moment whichever way it turns out. It is not an absolute index for treatment or criterion of cure, though it may be of much help to us in the absence of other signs. The old rules for the treatment of syphilis for prolonged periods with the approved remedies still hold good, entirely irrespective of the results of the blood examination.

3. *Salvarsan.* Some of the very first experiments with arsenobenzol in this country were made by me in the wards of the City Hospital, and they were almost the first ones made by an unprejudiced observer who was familiar with the disease, who knew what could be done with the older remedies when properly used, and who had the opportunities for continued observation of the cases at his command. My results were excellent, but they were very much at variance with the hysterical pean of praise that rose up from professional and, I am sorry to say, from nonprofessional sources also. These results were put on record at the time, and I should not refer to them now had not the experience of the two years that have elapsed since then shown them to be entirely right; so that the best authorities to-day stand practically on the ground that I then occupied almost alone.

The facts, as I now restate them, are apparently

as follows: Salvarsan is a very potent *symptomatic* remedy for syphilis; it often acts better and more quickly than mercury; but sometimes it acts less satisfactorily, or not at all. It does not cure syphilis any more than mercury does, probably not so well, for it is the common experience to find, as we did in our first properly observed hospital cases, that new symptoms of the disease set in, or old ones reappeared, more quickly after salvarsan than after mercury. These are not relapses, as they have been improperly termed; they are merely signs of the persistence of the disease in spite of treatment, and they entirely justify the assumption that the same persistence exists in the cases in which they do not appear. The introduction of salvarsan into the luetic therapeutics has therefore not changed the necessity for full mercury and iodine courses for the length of time that experience has shown to be best. And since it was evident to calm observation from the very beginning of its use that salvarsan in any dose does not cure syphilis, and that "sterilisatio magna" is, unfortunately, a dream of enthusiasm, the drug should be given in courses, combined with the regular mercurial and iodine treatment; so that a sustained and continuous action of both arsenic and mercury is obtained. Syphilis can be cured, in so far as it can be said to be curable, and in the absence of any absolute criterion thereof other than a reinfection, by mercury alone; it is better cured by mercury and arsenic together; it cannot be cured, so far as I know, by salvarsan alone. There is no evidence yet to show that the new drug prevents the occurrence of the later effects of syphilis on the nerve structures or influences its hereditary transmission any better than the old one; when the nerve lesions have already occurred, as in tabes and paresis, both are equally powerless. Nevertheless, salvarsan is so valuable a weapon in certain stages of the disease, and so useful an adjuvant to mercury and iodine in others, that its use is to be recommended in practically every case. It generally causes a most rapid disappearance of the annoying and dangerously infective secondary symptoms, and it helps and sustains the older drugs in the obstinate later manifestations of the disease. Besides this, it has been so well advertised among the laity that patients demand it, and expect, and therefore get, marked psychic as well as physical benefit from its use. It therefore now forms an integral part of the best treatment for the disease, both in its earlier and in its more advanced stages.

I prefer neosalvarsan to the older form of the drug, as being much more soluble, less liable to show toxic effects, and apparently equally potent. It is best administered in smaller divided doses in courses, and in conjunction with the regular mercury and iodine treatment. The intravenous route is decidedly the best: the amount of fluid required is only from fifty to 125 c. c., and it can be administered, with a proper and careful technic, in the office and without reaction. Intramuscular injection or adminstration per rectum is less effective and less desirable. My rule at present is as follows: In early cases a series of from four to six intravenous injections of from 0.3 to 0.45 gramme of neosalvarsan is given at weekly intervals; between these injections I give a full dose of mercury by intramuscular injection. The mercurial course is afterward continued for the usual length of time and in the usual doses. Occasionally, in severe cases or when opportunities for a full course are lacking, 0.75 or 0.9 gramme may be administered. The further employment of the drug in conjunction with the mercurial medication depends upon the symptoms; if these are obstinate, severe, or relapsing, a second or third arsenical course should be given with the mercurial ones. In late syphilis a similar combination of the arsenical and mercury-iodine medication is advisable; but the doses of the former may be greater and the intravenous injections less frequent than in the earlier medication.

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A QUANTITATIVE CHEMICAL REACTION FOR THE CONTROL OF POSITIVE WASSERMANN RESULTS.

(*A Preliminary Communication.*)

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In the attempt to offer to the clinician a laboratory method for the corroboration of the existence of lues in a given patient, a method upon which greater reliance could be placed than upon the Wassermann reaction, the following test is suggested. This reaction depends upon an exact quantitative chemical analysis, and does not suffer from the many uncontrollable technical difficulties that are so glaringly inherent in the Wassermann reaction. This reaction depends upon the fact that aliphatic amino groups (RNH_2) react with nitrous acid (HNO_2) according to the following equation:

$$RHN_2 + HNO_2 = ROH + H_2O + N_2$$

As in this reaction the N appears in the form of a gas, special methods for the estimation of this substance had to be devised. The method advanced by Donald D. Van Slyke, which is the most useful of all on account of its simplicity and the rapidity with which results are obtained, as well as exactness of end results, was employed in this work, and the results obtained are tabulated in these pages.

PRINCIPLE OF THE METHOD.

The nitrous acid decomposes of itself in solution with the formation of NO. The NO is made use of in this reaction to drive off all air from the apparatus. After this is attained, the amino containing substance is introduced into a container for the purpose, resulting in the formation of N and NO. The NO is absorbed by alkaline potassium permanganate solution, leaving unabsorbed the pure N, which is collected over water in a special burette for the purpose, and the quantity is read off.

REAGENTS.

After Van Slyke tried the various substances in vogue for the absorption of NO, it became apparent that the best material for this purpose was an

alkaline solution of potassium permanganate. This gives most satisfactory results as an absorbing agent. The solution is made up of fifty grammes of pure potassium permanganate and twenty-five grammes of potassium hydrate to the litre. The resulting formation of MnO_2, which, as a result of reduction, is present in an exceedingly fine state of subdivision, can be utilized for many tests before renewal. The sodium nitrite solution is made up of 300 grammes of $NaNO_2$, which is preferably obtained in powder form and dissolved in 1,000 c. c. of water. The solution, even if chemically pure, needs a preliminary correction for the presence of N, which, when ascertained, is known for the given lot of solution as the correction. It may, in some $NaNO_2$ samples, amount to as much as 0.5 c. mm, or even more, of N. This factor is deducted from the resulting quantity of N obtained from the analysis of a given substance. Ordinary glacial acetic acid is used to bring about the evolution of the gas.

THE APPARATUS.

The photograph shows the essential glass parts, the stand, the barometer at the bottom, and the thermometer suspended from the stand. The reaction takes place in E, which is an ordinary bottle of 37 c. c. capacity. Into the neck of this bottle fits a rubber stopper which has three openings and is held in place either with a wire or with a special clamp, to be had from the makers. The cylinder A has a capacity of 40 c. c. and is marked at 5 c. c. and at 25 c. c. Burette B is graduated up to 10 c. c. and holds the substance to be analyzed. The tube C serves to let out the gas formed during the preparation of the apparatus for an analysis, and also serves as a connecting tube between E and the gas burette. The lower end of C and B is exactly on the level with the rubber stopper. The capillary tubes C and F are connected with the gas burette D with stout flexible rubber tubing with a narrow bore. Tube F leads to the Hempel bulbs which hold the permanganate solution. The large burette D is filled with distilled water to the top of the rubber connecting tube. The water is raised and lowered at will by the water bulb G. The permanganate solution fills the capillary tube leading from the bulbs as far as the lower margin of the cock IV. A sensitive barometer is useful, and should be gauged in mm., not in inches.

DETERMINATION.

The reaction can be divided into three stages: First, driving off the air in the apparatus with pure NO; second, decomposition of the amino substance; third, absorption of the NO and measuring the left over pure N.

DRIVING OFF THE AIR.

The substance to be analyzed is placed in the burette B. In my work the patient's serum was treated with ten times its volume of ninety-five per cent. alcohol and permitted to stand over night at room temperature. The following morning the mixture was filtered, evaporated at a temperature not over 50° C., with negative pressure. The alcohol free residue left in the evaporating dish was dissolved with about seven to ten c. c. of boiling distilled water. The amount of serum used was usually 2.5 c. c. With the substance in B, the next process is to place seven c. c. of glacial acetic acid into A. It is important before placing the rubber stopper into the bottle E to note that the tubes A and B should be filled flush with the bottom of the openings of the tube; this is done by placing about twelve c. c. of glacial acetic acid in A and permitting the surplus to flow back into the acid container until only seven c. c. are left. Tube B is treated in a

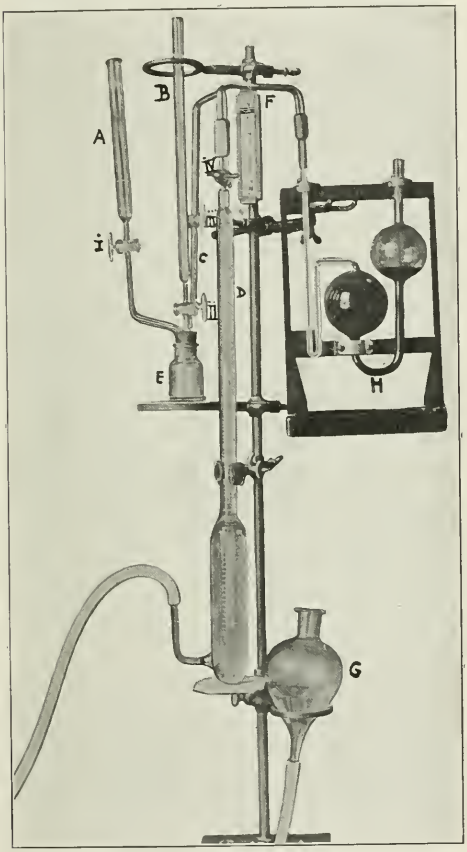

FIG. 1.—Apparatus used in Doctor Van Slyke's method of controlling Wassermann results.

similar manner, in that the substance to be analyzed should be permitted to flow back into the test tube, filling the tube to the lower tip; the substance remaining in the test tube is poured back into tube B. Cocks I and II, naturally, are shut, while cock III is open. The rubber stopper and the tubes it carries are fitted snugly into the neck of E and fastened with a wire. Cock I is opened, and the acetic acid permitted to flow into E. This causes an immediate evolution of gases, and the air is driven off through the open cock III. In order to facili-

tate the evolution of gas the bottle E is constantly shaken for about two or three minutes. At intervals cock III is closed, which forces the fluid from the bottle back into tube A. When this is accomplished two or three times cock I is closed, with the cylinder A about eight tenths filled. The bottle and tubes are placed on the stand, as shown in the photograph, and joined to the burette.

DECOMPOSITION OF THE AMINO SUBSTANCE.

After C and F are joined, cock II is opened and the substance permitted to flow into E. The cock is closed. The bottle is vigorously shaken for exactly five minutes; this results in a quick development of N, with which is admixed a great deal of NO. At the end of this time cock I is opened, which drives the gases into the burette D, and when the bottle is filled to the top, as well as the connecting tube C to the bottom of the opening of cock IV, cock I is shut off and the gas in the burette D is ready to be forced into the permanganate solution. This is accomplished, previous to opening the connection at cock IV, by lifting the bulb containing the water five or six inches above the connecting tubes. Cock IV is opened, and the gas forced into the Hempel bulbs. The gas is now being purified, as the permanganate solution absorbs all the NO present almost instantaneously. The Hempel bulbs are shaken for two minutes before the actual estimation of the N takes place.

MEASURING OF THE REMAINING N.

Cock IV is opened, and the permanganate allowed to flow as far as the lower end of the opening in the cock, when it is quickly shut off. The amount of gas is determined by bringing the water bulb on a level with the niveau in the burette D. From the resulting quantity of gas is next deducted the correction factor, and the remaining amount of gas is the final figure for the given quantity of substance analyzed. As the temperature and the barometric pressure must be taken into consideration in the calculation of the amino nitrogen, the above given table is used for the final calculation, which gives the amino N in milligrammes. The figures were obtained from the values given in Gattermann's book, *Praxis des organischen Chemikers,* ninth edition, and were divided by two for moist N. These numbers represent the weight of amino N, in milligrammes, which corresponds to one cm. of N gas, as obtained by the action of nitrous acid and by measuring the gas over water, at the given temperature and pressure.

With this method and with these considerations the results obtained in the various cases studied were very promising. It is apparent that there is a marked difference quantitatively between luetic and nonluetic individuals. I do not wish to overestimate the value of these findings, and would simply add that in these analyses we have a control of those positive Wassermann tests that do not possess clinical signs of syphilis. In a case where the amino content is very great, as compared with a positive case, the reaction should be done over again. It is too early to place a greater significance on these results at present; that there will be reported conditions with very poor amino content in different clinical states is almost certain. For the reason that the amino nitrogen is very much diminished in syphilis, as compared with conditions of nonluetic etiology, I believe we possess a means of weeding out unexpected positive Wassermann reactions.

T.	b.728	730	732	734	736	738	740	742	744	746	748	750mm	b.752	754	756	758	760	762	764	766	768	770	772mm
11°	.5680	.5695	.5710	.5725	.5745	.5760	.5775	.5790	.5805	.5820	.5840	.5885	.5870	.5885	.5900	.5915	.5935	.5950	.5965	.5980	.5995	.6010	.6030
12°	.5655	.5670	.5685	.5700	.5720	.5735	.5750	.5765	.5780	.5795	.5815	.5830	.5845	.5860	.5875	.5890	.5905	.5925	.5940	.5959	.5970	.5985	.6000
13°	.5630	.5645	.5660	.5675	.5695	.5710	.5725	.5740	.5755	.5770	.5785	.5805	.5820	.5835	.5850	.5865	.5880	.5895	.5910	.5930	.5945	.5960	.5975
14°	.5605	.5620	.5635	.5650	.5665	.5680	.5700	.5715	.5730	.5745	.5760	.5775	.5790	.5805	.5825	.5840	.5855	.5870	.5885	.5900	.5915	.5935	.5950
15°	.5580	.5595	.5610	.5625	.5640	.5655	.5670	.5685	.5705	.5720	.5735	.5750	.5765	.5780	.5795	.5810	.5830	.5845	.5860	.5875	.5890	.5905	.5920
16°	.5555	.5570	.5585	.5600	.5615	.5630	.5645	.5660	.5675	.5690	.5710	.5725	.5740	.5755	.5770	.5785	.5800	.5815	.5830	.5850	.5865	.5880	.5895
17°	.5525	.5540	.5555	.5575	.5590	.5605	.5620	.5635	.5650	.5665	.5680	.5695	.5710	.5730	.5745	.5760	.5775	.5790	.5805	.5820	.5835	.5850	.5865
18°	.5500	.5515	.5530	.5545	.5560	.5580	.5595	.5610	.5625	.5640	.5655	.5670	.5685	.5700	.5715	.5730	.5745	.5765	.5780	.5795	.5810	.5825	.5840
19°	.5475	.5490	.5505	.5520	.5535	.5550	.5565	.5580	.5595	.5610	.5630	.5645	.5660	.5675	.5690	.5705	.5720	.5735	.5750	.5765	.5780	.5795	.5810
20°	.5445	.5460	.5475	.5495	.5510	.5525	.5540	.5555	.5570	.5585	.5600	.5615	.5630	.5645	.5660	.5675	.5690	.5705	.5725	.5740	.5755	.5770	.5785
21°	.5420	.5435	.5450	.5465	.5480	.5495	.5510	.5525	.5540	.5555	.5575	.5590	.5605	.5620	.5635	.5650	.5665	.5680	.5695	.5710	.5725	.5740	.5755
22°	.5395	.5410	.5425	.5440	.5455	.5470	.5485	.5500	.5515	.5530	.5545	.5560	.5575	.5590	.5605	.5620	.5635	.5650	.5665	.5680	.5695	.5715	.5730
23°	.5365	.5380	.5395	.5410	.5425	.5440	.5455	.5470	.5485	.5500	.5515	.5530	.5545	.5560	.5575	.5595	.5610	.5625	.5640	.5655	.5670	.5685	.5700
24°	.5335	.5350	.5365	.5380	.5400	.5415	.5430	.5445	.5460	.5475	.5490	.5505	.5520	.5535	.5550	.5565	.5580	.5595	.5610	.5625	.5640	.5655	.5670
25°	.5310	.5325	.5340	.5355	.5370	.5385	.5400	.5415	.5430	.5445	.5460	.5475	.5490	.5505	.5520	.5535	.5550	.5565	.5580	.5595	.5610	.5625	.5640
26°	.5280	.5295	.5310	.5325	.5340	.5355	.4370	.5385	.5400	.5415	.5430	.5445	.5460	.5475	.5490	.5505	.5520	.5535	.5550	.5565	.5580	.5595	.5610
27°	.5250	.5255	.5280	.5295	.5310	.5325	.5340	.5355	.5370	.5385	.5400	.5415	.5430	.5445	.5460	.5475	.5490	.5505	.5520	.5535	.5550	.5565	.5580
28°	.5220	.5235	.5250	.5265	.5280	.5295	.5310	.5325	.5340	.5355	.5370	.5385	.5400	.5415	.5430	.5445	.5460	.5475	.5490	.5505	.5520	.5535	.5550
29°	.6195	.5210	.5220	.5235	.5250	.5265	.5280	.5295	.5310	.5325	.5340	.5355	.5370	.5385	.5400	.5415	.5430	.5445	.5460	.5475	.5490	.5505	.5520
30°	.6160	.5175	.5190	.5205	.5220	.5235	.5250	.5265	.5280	.5295	.5310	.5325	.5340	.5355	.5370	.5385	.5400	.5415	.5430	.5445	.5460	.5475	.5490

The following table of analyses is offered as a preliminary study of this most interesting quantitative difference. The amount of serum used in the test was with but very few exceptions 2.5 c. c., and in the case of cerebrospinal fluids, 4.0 c. c. The temperature ranged between 20° and 23° C., and the barometric pressure ranged from 753 to 764 mm. The resulting figures given in the table represent the amount of amino nitrogen in 100 c. c. of the substance used. For comparative use the Wassermann results are also offered.

POSITIVE SERIES.

Case.		W. R.	Amino N.
Kl.	Cerebrospinal lues	+	0.176
Ca.	Systemic lues	+	2.412
Cy.	Luetic meningomyelitis	+	0.568
Go.	Cerebrospinal lues	+	2.242
Mu.	Specific nasal septum	+	1.148
Ha.	Luetic pupils	+	0.560
Mi.	Florid lues	+	0.0
Ra.	Tabes	+	1.559
Th.	Tabes	+	2.244
Be.	Endarteritis cerebralis luetica	+	1.133
Ch.	Systemic lues	+	2.263
Ba.	Secondary lues (puella publica)	+	1.131

In order to impress the difference between the positive results scheduled above and the negative results obtained with nonluetic sera I will next give the figures obtained with such material.

NEGATIVE SERIES.

Case.		W. R	Amino N.
Ry.	Epilepsy	—	12.399
De.	Arteriosclerosis simplex	—	9.516
Sch.	Involutional melancholia	—	7.950
Cu.	Cauda eqina disease	—	9.144
Ko.	Mother of retarded baby. Two miscarriages	—	17.573
Ma.	Hysterical hemiplegia	—	7.847
Li.	Osteoarthritis of the spinal column	—	9.488
H. S.	Arteriosclerosis simplex	—	12.342
Oh.	Dementia præcox	—	10.098
Cr.	Epileptiform seizures	—	12.249
Li.	Epilepsy	—	12.249
Ki.	Epilepsy	—	13.863
Mo.	Muscular rheumatism	—	11.136

Case.		W. R.	Amino N.
Le.	Osteoarthritis	—	6.789
Ad.	Ulcers on vocal cords	—	8.224
Wr.	Senile dementia	—	6.789
Ke.	Arthritis rheumatica	—	7.158
Al.	Progressive muscular atrophy	—	6.724
Gi.	Dementia præcox	—	6.724
Me.	Gonorrheal hip	—	7.865

The smallest quantity of amino N obtained in this negative series is in the case of Al. and Gi. Compared with the greatest amounts obtained with the positive sera, which is in the case of Th. (2,244), a very appreciable contrast of a differentiating nature is still to be had. Where the positive Wassermann reaction gives one the impression of a laboratory error, or makes one think of another peculiarity of the test, of which there are many and some as yet undiscovered, these numerical differences may offer to the clinician in some instances another laboratory support of more acceptable value. As will be shown later, one sometimes obtains results with the Wassermann reaction that are very vexing, inasmuch as the clinical findings and the entire status of the patient, moral, social, and otherwise, make syphilis a very undesirable and impossible diagnosis. That there are such cases one must admit, but I hope that such Wassermann reports in the future will be corroborated by the quantitative chemical analysis offered in this communication.

CEREBROSPINAL FLUID ANALYSES.

Case.		W. R	Amino N.
Ni.	Exudative tabes; 80 lymphocytes per c.mm.	+	0.703
Th.	Tabes. Well treated with 914 and Hg. 26 lymph.	—	2.810
Ra.	Tabes	+	1.554
Kl.	General paresis. W. R. performed in Bellevue Hospital	+	0.472
Tr.	General paresis. W. R. performed in Bellevue Hospital	+	2.686
Sa.	Alcoholic psychosis. Stiff pupils	—	1.466
On.	General paresis	+	1.122
Fi.	Hysteria. Chancre twenty years ago	+	2.800
Ly.	Lateral sclerosis	—	0.943
Mu.	Cerebrospinal lues	+	0.566
Fo.	Cerebrospinal lues	..	0.844

The rather small number of analyses offered above does not permit at present of matured conclusions. The quantity of amino in cerebrospinal fluid is very small, and, as it seems to me at present, does not offer the great differences obtained with serums. It may, however, show quantitative increase in some conditions, which will be spoken of later in a more complete communication.

In reporting upon serums submitted for analysis with the Wassermann method one inevitably reports here and there positive on a patient who did not come in contact with syphilis. Such is the case in my laboratory to the extent of 0.3 per cent. Unpleasant as this may seem, it nevertheless cannot be done away with. There was such an occurrence in the case of a patient of Doctor L. This patient was an unmarried woman, twenty-six years old, who suffered from headaches. As a permanent cure could not be obtained a Wassermann reaction was suggested, with the result stated above. The amino nitrogen in this case was unusually high, which at once gave a doubtful significance to the Wassermann result. The amount of N was 14.965. In another instance the patient, Lu., gave a weakly positive result. The amino N was 12.448.

Next are a few instances of negative Wassermann results in syphilitic patients with positive amino content.

Case.		Amino N.
Ro.	Arthritis syphilitica	1.124
Bl.	Congenital syphilis	0.0
Ber.	Tabes. Three 914 injections, intravenous	1.143
P. G.	Diffuse syphilitic skin lesions	1.121
Hi.	Spinal spastic luetic paralysis	1.099
Ma.	Tabes	1.131

There seems to be some relation between the disappearance of the plus Wassermann reaction and the increase in the amino nitrogen. It will be seen from the few cases scheduled that the greatest increase is to be had in those cases of syphilis where the Wassermann reaction is absolutely negative. Those that showed a slight increase only also retained their positive Wassermann reaction.

Case.		W. R.	Amino N.
De.	General paresis. Two 606 intravenously, 30 mercurial inunctions	—	11.22
To.	Tabes. Three 914 intravenously, many mercurial inunctions	—	10.143
Fu.	Tertiary lues. Many mercurial salicylic injections	+	3.65
Br.	General paresis. Five 914 intravenously, 60 mercurial inunctions	+	3.408
233	Chancre four years ago. Four 606 injections	+	1.136
Hav.	Cerebrospinal lues. Two 914 injections	+	3.429

CONCLUSIONS.

1. In offering this preliminary communication I wish to be placed on record as a laboratory worker whose experiences with the Wassermann test compel him to be extremely cautious and overconservative regarding the clinical significance of this very complex reaction.

2. It is urgently needed that something of a more definite basis than the side chain theory should be at our command for the gauging of syphilitic serums.

3. I feel fairly certain that the determination of amino nitrogen in the serums from syphilitic patients will lend itself to further elaboration and give useful results on the lines suggested.

4. Although it may seem premature, I nevertheless would regard a serum where a positive Wassermann reaction was obtained as very dubious in a patient whose amino nitrogen is normal.

5. The amino content of syphilitics, as found by me, is frequently very much diminished, although the Wassermann reaction may be negative.

6. Whether a patient should be treated until the amount of amino nitrogen is restored, giving us another gauge as to therapy, is for the future to determine.

7. The general paretic patients who gave a normal amino nitrogen in one instance and showed a tendency to increase in another are in very good physical condition and show no psychic stigmata of the disease. Of course, the characteristic pupils are still there.

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30 BEEKMAN PLACE.

Treatment of Wounds.—Soubeyran, in *Paris médical* for December 21, 1912, is credited with the following stimulating ointment, to be applied to open granulating surfaces or sinuses that are slow in healing:

℞ Balsami peruviani, ...ʒx (40 grammes);
Styracis, ...ʒiiss (10 grammes);
Petrolati, ...℥iss (50 grammes).
M. ft. unguentum.

THE PROBLEM IN LOCAL RECURRENT BREAST CANCER.*

By C. W. STROBELL, M. D.,
Rutland, Vermont,
Attending Surgeon, City Hospital.

As an unsolved problem, cancer easily distances its great rival, tuberculosis, in that it is not yet recognized or treated as of pathogenic germ origin.

My contribution to this important symposium on cancer is based upon the fact of practically no recurrence in fourteen years' experience with radical chemical extirpation, and should be regarded as supplemental to one published in the *American Journal of Surgery* for November 1913, entitled, A New Method of Treatment of Cancer of the Breast based on the Nature and Causes of Recurrence. Certain seemingly apparent facts, unavoidable deductions, and tentative propositions recorded in that paper should have careful consideration, as a foundation for conclusions concerning the following.

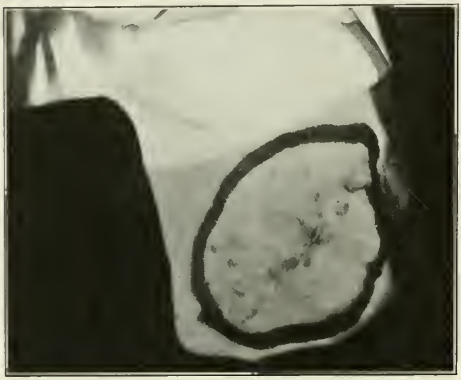

FIG. 1.—Reappearance of breast carcinoma in fifteen months, following the radical standard extirpation of Halsted.

That the question of recurrence in cancer of the breast is a very real and live problem needs no defence. Recurrence is of far greater concern to the surgeon than primary extirpation, because in the primary operation the case is, as a rule, in the preferred or so called "operable" class, and holds out a reasonable hope of ultimate cure; whereas, confronted with recurrence, the surgeon is quite helpless, in view of the well recognized fact that further excisions are usually but palliative measures. Did the patients in these recurrent cases more frequently recover as the result of single, or even successive, excisions, the subject would long ago have stimulated the consideration it deserves; the opposite being the case, however, there is only inclination to shift responsibility, and to forget as quickly as possible the unpleasant episode. It therefore quite naturally follows that but little appears in the literature on the subject of recurrence, except in reports of unsuccessful cases. To be sure, the present day results, as regards both cure and recurrence, compared with those set forth by Gross in his *System of Surgery*, 1882 (ii., pp. 982-3), show a very substantial improvement, thanks to the genius of our American surgeons. May I be pardoned if I digress for a moment to say that whatever has been accomplished in this direction, however, cannot justly be credited to either the accuracy or utility of Cohnheim's theory of the embryonic origin of tumors, as applied to malignant disease. On the contrary its failure to meet the test has insistently directed attention to the very obvious fact of a pathogenic germ origin. Therefore the Cohnheim theory, as applied to the embryonic origin of malignant tumors, must go; it has never been proved. According to Delafield and Prudden's *Pathological Anatomy and Physiology* (5th edition, p. 291), "no one has seen the strayed or delayed embryonic cells." Infection, as applied to the resumption of physiological activity of originally displaced, long dormant, and newly awakened embryonic cells, is a misnomer, and violates all rules of practical, hardheaded common sense. Nor can there be such a thing as a primarily germ infected, strayed, and coralled embryonic cell lying dormant for periods varying from fifteen to fifty years; to me it is unthinkable. Thus the proposition is: Either the misplaced cell was infected at the time of its "straying," or it was not. If infected, it must have been by a pathogenic germ; if by a pathogenic germ, pathogenic changes would soon have resulted. Life does not stand still save in *cold* storage. In the case of benign tumors, it probably is true that they are due to such an origin as heredity, or trauma, or displaced embryonic cells, but benign tumors neither recur nor metastasize; thus proving that they are in a class by themselves. Malignant tumors, however, do recur and metastasize, *and these attributes are characteristic of pathogenic germ infection.*

FIG. 2.—Same case as shown in Fig. 1, five weeks subsequent to skin grafting, following the radical chemical extirpation of the author.

Recurrence, in cancer of the breast, implies a preceding radical extirpation. The rapidity of such a return depends upon many conditions, none

*Read by invitation in the Symposium on Cancer, before the Medical Society of the County of New York, March 24, 1913.

of which are definite or absolute; so that even in a most carefully selected case, operated in under ideal conditions, there may be primary recurrence within two or three months; while, on the other hand, recurrence may be surprisingly delayed, as notably in scirrhous conditions. "Of such recurrences," Pearsoll tells us, "eighty-five per cent. are in the chest wall and fifteen in the axilla." Recurrence following the radical standard extirpation is almost universally regarded as an external evidence of internal metastasis. I do not so regard it. To me it is simply the perceptible evidence of renewed activity of surviving specific pathogenic organisms. If internal metastasis to an abdominal or pelvic viscus exists at the time of recurrence, it so exists quite independently of the latter. Metastasis dating from a local recurrence is only by continuity through the chest wall to the pleura and lung, and thence to the general system. Whenever metastasis to any part of the abdominal or pelvic viscera manifests itself prior to, or coincident with, recurrence, it is certain that the primary operation was too late. This could not be known at the time of operation for the reason that the beginnings of all disease processes are microscopic rather than macroscopic, and that thus early they are also without appreciable symptoms. So that at the time of operation, the true extent of the disease must always be more or less problematical. To-day, for the first time in medical history, is there apparently something tangible at hand to hang our hopes upon; this consisting mainly of the very obvious fact of infection by a specific cancer germ, and the apparently corroborative results of the new chemical surgery. This new chemical surgery is based upon the assumed facts stated above and *upon scientific principles, and questions altogether the expediency or safety of extirpation by excision through presumably healthy adjacent tissues.*

The foregoing facts should be accentuated in connection with the importance of a speedy and most radical secondary operation upon the earliest indication of recurrence, such as can only be accomplished with any degree of scientific certainty by the new chemical technic outlined in the original article already referred to. By the employment of this technic I regard recurrence, unaccompanied by internal metastasis, as a curable condition. May I digress for a moment to call attention to the fact that of the seven radical chemical operations I have thus far reported, only one was a really suitable case for the legitimate expectation of ultimate cure, all the others being far advanced. This will be seen by a study of that report; and yet in not one of that number is there, or has there been, any sign of local recurrence. One of the patients, with evident metastasis at the time of operation, returned, a year and three months later, with a tumor in the left breast, with accompanying bilaterally enlarged cervical lymphatics. Despite this development, however, and the ultimately fatal outcome (occurring subsequently to the publication of the report), absolutely no sign of local recurrence was observed at any time at the site of the removed breast. Surely my work deserves attention, if for no other reason than the fact that in all the patients the enlarged axillary lymphatics disappeared.

I desire here to submit the report of a recurrent case, with coincident internal metastasis, tentatively and palliatively operated in by the new chemical method. To my mind, it is a beautiful object lesson as to what may be done in even such a hopeless condition. The photographic plate of Fig. 1 was taken when the patient arrived. The black band about the infected field was done with the tincture of iodine, merely to mark the outermost boundary of involvement. It will be noted that recurrence was, as usual, along the line of "incision and suture," with secondarily infected trauma nodules studding the field above and below, which in similar cases are probably due to tension of other sutures, minute breaks in the skin from severe stretchings, or drainage punctures and stabs. The centre of the line exhibited an ulcerating aggregation of nodules. At the axillary end of the line was a larger mass as yet intact. About an inch superior to this mass and lying beneath the remaining portion of muscle was to be felt a large, freely movable lymph node, the size of a robin's egg. The tissue to be removed was firm, unyielding, cicatricial, and fixed to the chest wall. The involved area measured seven by nine inches in its transverse diameters; surely the picture of an extreme type of recurrence, in which few surgeons would have the disposition to employ reexcision.

The case was that of Mrs. P., aged seventy-two, an American, always in poor health. A radical standard extirpation of the breast had been performed in 1910, at Albany, N. Y. At the expiration of a year and three months evidence of recurrence was noted. Two months later the patient was referred to me for chemical surgery in a final attempt to save her. The problem was most difficult, as the devitalization had to be very carefully gaged and guarded on account of the near proximity of the pleura to the overlying affected area and the close relationship existing between the auxiliary vessels and the large node under the pectoral stump. The tissues lying within the circumscribed area down to, but not involving, the periosteum of the ribs, together with the enlarged node, were removed; a fine granulating surface eventually presenting. This granulating surface was then covered with Ochsner skin grafts, every graft "taking." The photograph of the completed condition was taken about five weeks after the grafting operation. *Under the influence of important modifications in the previously described technic, the discomforts attendant upon previous operations were almost wholly abolished.*

Fig. 2 shows the healed site of the operated area, the outlines of the larger grafts being easily traced. These grafts have gradually taken on the natural pale flesh color with the accumulation of subcutaneous fat, and have the same appearance in their central portions as that of the surrounding skin. At the end of three months, in an uncomplicated early case of recurrence, the same result would obtain as is shown in plate XIV of my previous article. The skin should then be quite freely movable, possessed of the normal glandular secretions, and would need no care different from that of the surrounding skin. Subsequent to the taking of the photograph, a few very small flat, lentillike papules, discovered well outside the operated area, were devitalized as a precautionary measure. The operation was done in November, 1912, and at this reading the patient is in fine condition.

23½ Merchants Row.

SOME UNUSUAL OBSTETRICAL COMPLICATIONS.

*With Reports of Cases.**

By Frances Merriam Myers, M. D.,
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What I am about to present to you this evening is not a paper in any sense of the word—it is merely a report of a number of cases coming under my care during the past few years which have been of

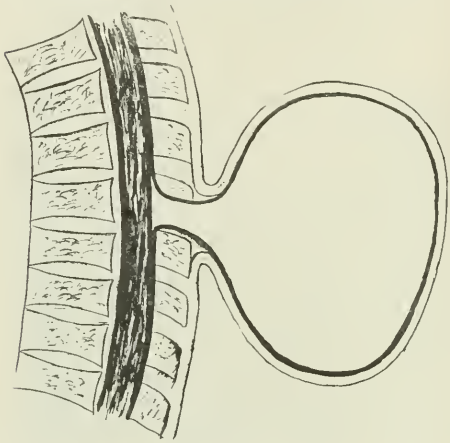

Fig. 1.—Diagram showing protrusion of membranes of the cord in meningocele.

especial interest to me, and which I hope may interest you and serve as an introduction to reports of somewhat analogous cases encountered in your work.

The first two cases are instances of spina bifida or hydrorrachis posterior, and, before reporting them, I shall briefly review the salient points of this malformation. It has been defined as a congenital hernia of the spinal membranes, with or without the cord, through a cleft in the vertebral column, due to a deficiency in the vertebral arches, or through an intervertebral space. This condition is found in one out of 1,200 births, and has been observed more frequently in girls than in boys. Both my cases were in girls. Holt reports two cases in one family, successive children of the same parents; and Bryant has seen two protrusions in one individual, one being lumbar and the other sacral. Though the swelling is usually posterior, and takes place through clefts in from one to four vertebral arches, it has occurred anteriorly through a bifid vertebral body—spina bifida occulta.

Three varieties of spina bifida are seen. The first is the meningocele, which is a protrusion of the membranes of the cord, the cord itself not being present in the tumor. This is filled with a fluid similar in all respects to the cerebrospinal fluid; and as this increases in amount the sac becomes distended, in one reported case reaching a circumlaminæ of the vertebræ takes place from above ference of twenty-two inches. This variety of spina bifida occurs most frequently in the cervical region, is usually pedunculated and translucent, and is the form most amenable to treatment. (See diagram in Fig. 1.) The second form, meningomyelocele, is the most common variety of spina bifida, occurring in thirty-five out of fifty-seven cases reported by Demme. In the meningomyelocele, as the name indicates, there is present, in addition to the spinal membranes, part of the spinal cord, the fibres of which are implanted in a cicatrix which is situated near the centre of the mass. From this cicatrix or central umbilication the fibres emerge, but again enter the spinal canal after traversing the internal surface of the lower half of the tumor. (See diagram in Fig. 2.) In this form of spina bifida the mass is always sessile, and is usually located in the lumbosacral region. This location is accounted for by the fact that ossification of the downward, so that delayed union of the two ossific centres for the lumbar laminæ leaves a weak spot for the protrusion of the spinal contents as the intraspinal tension increases. The third form is the syringomyelocele. In this there is a dilatation of the central canal of the spinal cord, and usually an associated hydrocephalus. It is seen oftenest in the dorsal or dorsolumbar portion of the spine, and rarely in the lumbosacral region. Paralysis of the bladder and rectum may be present in the lumbar form of spina bifida, with more or less complete paralysis of the lower extremities; but in the sacral variety paralysis of the bladder and rectum only may exist, on account of the involvement of the fourth sacral nerve in the cauda equina.

Other deformities are frequently associated with spina bifida, the most frequent being hydrocephalus, hare lip, talipes, encephalocele, and cerebral meningocele. In all forms of spina bifida the prognosis is poor, but is the most promising in simple meningocele. A cure may result in this form from operative procedures, or occasionally from a spontaneous rupture followed by an obliterating inflammation and sloughing of the mass. Treves believes that this desirable end would be more often accomplished if operative interference, with its frequently fatal result, were more often abstained from. In

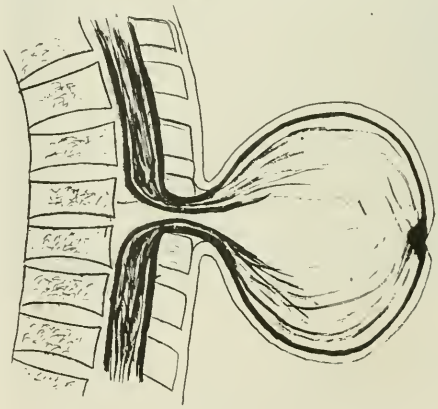

Fig. 2.—Diagram showing protrusion in meningomyelocele.

*Read before the Women's Medical Association of New York City, March 19, 1913.

meningomyelocele and syringomyelocele, which, according to the report of the London Clinical Society, constitute ninety-five per cent. of the fatal cases, the case may terminate in one of three ways: First, rupture of the sac with draining of the cerebrospinal fluid, convulsions, and death; second, rupture with infection and consequent spinal and cerebral meningitis; or, third, infection through the attenuated integument, without rupture.

The only treatment possible in cases associated with paraplegia, hydrocephalus, or involvement of the bladder and rectum is the protection of the tumor from pressure and infection. Operative measures are advised by Holt if the child has survived six months without paralysis of the lower extremities or of the bladder and rectum, and he considers operation occasionally admissible earlier if the tumor is tense and rupture seems imminent; while Treves advises palliative measures unless there are urgent indications for active interference, and reports cases which lived to the ages of twenty-eight, thirty-seven, forty-three, and fifty years without operation.

Case I. The first case which I am about to report to you can be classed as a meningomyelocele; and the child was born March 29, 1903, after a normal labor, the only remarkable feature of which was an unusually large amount of liquor amnii, estimated to be about nine quarts. The presentation was left occipitoanterior, and the duration of labor five hours. She was the fourth child, and the other children, and both parents, were unusually well and strong. At birth a lax, sessile sac was discovered over the lumbosacral region. This was empty, and had, at its centre, an umbilicated mass of granulation tissue; while a longitudinal cleft in the vertebral arches could readily be palpated. Even light pressure over the depression in the spinal column caused crying, but no other phenomena. The sac slowly filled, although there was leakage from the first from the umbilicated centre, the fluid being colorless, and not stiffening the dressings. On removing the dressings at the end of twenty-four hours, the boric acid which had been used as a dusting powder was found to be of a bright yellow. The right leg was flexed most of the time, and irritation of the soles of both feet produced no effect beyond slight movements of the toes, the usual flexing of the leg which occurs on tickling the soles of normal newborn babies being absent. The feet were cold at all times, regardless of warm clothing. Urine and feces were passed normally; but the child was slow about learning to nurse, and never took an average amount of nourishment, even with spoon feeding. The fluid in the sac slowly increased until the twelfth day, when complete rupture took place (no especial pressure having been made upon it), and about four ounces of fluid escaped. The general condition was not at first affected by the rupture—sleep, nursing, crying, etc., occurring as before. On the eighteenth day after birth, and the sixth day after the loss of fluid, a few convulsive movements took place and food was refused; general convulsions and death occurred the next day. As the fatal prognosis was realized, the only treatment attempted consisted in lightly sponging off the sac with a weak solution of mercury bichloride and dusting it with boric acid. A ring of absorbent cotton served to keep the weight of the child from the sac. On two occasions I found this dressing disturbed for purposes of exhibition to the neighbors, but no signs of meningitis developed. An autopsy had been arranged for at Carnegie Laboratory, but at the last moment the parental consent was withdrawn and no post mortem examination allowed. The mother has since had four perfectly normal robust children.

Fig. 3.—Showing a case of spira bifida. (From Holt.)

Fig. 4.—An anencephalic monster. (From Schroeder.)

Case II. During the summer of 1910 I was called upon to take charge of the oldest daughter of this patient, a girl of eighteen, who had been married about a year and was pregnant for the first time. The pregnancy was normal in every respect and labor took place November 24th (Thanksgiving Day). A brow presentation delayed delivery somewhat, but it was accomplished spontaneously, and a rather small girl baby was born at the end of fifteen hours. My attention was immediately attracted by a sessile tumor in the lumbosacral region. This, also, proved to be a meningomyelocele, two and one half inches in diameter, raised two inches above the level of the surface of the body, and resembled closely the condition which had presented itself in her little aunt seven years before, except that rupture of this second sac had not occurred at birth. Three days later, in spite of every care, rupture took place. The sac alternately refilled and leaked until the twelfth day, when the baby quietly died. There was no paralysis of the lower extremities, nor of the bladder and rectum in this case, and no terminal convulsions. (Fig. 3.)

A few months ago I again delivered this patient, this time of a normal boy.

The most startling abnormalities which have come to me in obstetric work have been two cases of anencephalic monsters; and no one who has not seen this deformity can appreciate its revolting appearance. As you know, the anencephalus or hemicephalus derives its name from the absence of most of the brain and cranial vault, the base of the skull being exposed to view. (Fig. 4.)

Case III. My first case was a large, well developed girl, the fifth child of normal German parents. The preceding four children were all perfectly developed, and pregnancy had been normal in this case. Delivery occurred on November 29, 1906 (Thanksgiving Day), and let me remark, in

passing, that Thanksgiving Day has again and again brought me abnormal confinement cases. In this anencephalus case also there was more than two gallons of liquor amnii, and when the membranes were artificially ruptured at the conclusion of the first stage of labor, and it became possible to palpate the fetus through the cervix, the findings were decidedly queer. The head presented by the brow, and the sella turcica and olivary process, with the various other processes, on the superior surface of the sphenoid bone could be felt taking the place of the usual cranial vault. As my attention had never been directed to this abnormality, I was decidedly at sea; but the pains were good and, the second stage advancing rapidly, delivery was soon accomplished. There was a little mass in the frontal fossa which contained rudimentary brain tissue. Part of the temporal, frontal, and occipital bones were present, but the parietal bones were entirely lacking.

CASE IV. My second anencephalous baby was the third child of healthy Vermont parents. The family history was excellent on both sides down to this particular family, but the first child had been anencephalic and the second a spina bifida, living nineteen days. The third, whose birth I attended, as the parents had moved to Mount Vernon, proved to be an anencephalic monster. The pregnancy had been a rather painful one, with many false labor pains during the last two months; but the patient was in good condition, an otitis media being the only disturbing element. The feet presented in this case, and the baby being large and distending the abdomen almost to the limit, the absence of the cranial vault could not positively be made out, although the small size of the head was noted. Labor took place October 19, 1908, and, after five hours a large boy was born who was otherwise well developed. The cranial condition was similar to the anencephalic case just described, except that integument covered the vault. As you may imagine, the parents were almost in despair at this third abnormality in the family, and decided to adopt a baby; but while I was helping them to find one which came up to every requirement, the patient again became pregnant, and I delivered her of a normal boy. Two years later a perfectly formed little girl was born to them, and we are no longer searching for a little waif for that family.

But two anencephalic monsters and a spina bifida in rapid succession were certainly nothing less than appalling!

A hydrocephalic baby, with hare lip, cleft palate, and supernumerary little finger; another case of hare lip; a baby with a supernumerary thumb, and one with rudimentary fingers of the right hand, but a perfect thumb, complete my list of malformations; and in *none* of these cases was there anything which could be construed as the faintest approach to a maternal impression. Before these cases occurred I was always most optimistic when questioned by nervous prospective mothers as to the possibility of abnormal babies. I am still just as optimistic in my reassurances; but the occurrence of these cases has forced me to make a few private mental reservations.

You may have noted that in two out of my four major malformations, viz., one spina bifida and one anencephalic monster, there was a marked polyhydramnios—the fluid in the first spina bifida filling an ordinary wooden pail three quarters full, estimated at nine quarts, and the first anencephalic case having about the same quantity. The nurse reported in the second anencephalic case that there was a gush of an unusually large quantity of fluid, but could not give me an idea of the amount. You will remember that the normal amount of liquor amnii has been estimated as from 600 to 1,800 c. c. (eighteen to fifty-four ounces), or one to three pints. The condition of polyhydramnios has been noted in other cases of spina bifida and anencephalic deformities, and is attributed to an excess of urinary secretion on the part of the fetus, due to the stimulation of the cerebral or spinal centres, which are without their normal coverings; and this presumption is fortified by the fact that in these cases there is a slightly higher percentage of urea in the liquor amnii than is usually found. This explanation is not wholly satisfactory, however, as other deformities of the fetus, such as hare lip, clubbed feet and hands, webbed fingers, and imperforate anus, are also occasionally accompanied by an excess of liquor amnii; and also for the reason that the major malformations are sometimes coexistent with marked oligohydramnios. Very little has been written upon this subject, and a paper by Dr. Joseph Browne Cooke, published in the *American Journal of Obstetrics* (LIV, No. 6), on Abnormality in Amniotic Secretion in Its Relation to Fetal Malformation is of absorbing interest.

Leaving the subject of teratology, I now have several cases to report in which the course of *delivery* was attended by unusual complications. These do not include the ordinary run of cases of placenta prævia, eclampsia, and abnormal presentations which occur with a certain regularity in every obstetric practice, but comprise several which have been of especial interest to me because of their rarity. The first was a case of unrecognized chronic appendicitis, an acute exacerbation of which complicated a six months' pregnancy, and was terminated by a pulmonary embolus.

CASE V. The patient was a medical graduate, aged thirty-seven years, and the mother of two children, one, two and one half years and one sixteen months old, and was at the time six months' pregnant. At about the third month of her second pregnancy the patient had severe pain in the right iliac fossa, accompanied by what she called "uterine pain." This was regarded by her attending physician as a threatened abortion, and the patient was kept under the influence of large doses of morphine for about two weeks, at the end of which time the pain and tenderness in the right iliac fossa had disappeared and did not return until the day after her delivery, when they recurred violently for one day and were attributed to indigestion after the ingestion of milk. There was an absence of all pain and tenderness for a year, but about three months previous to the fatal attack, when the patient was again about three months' pregnant, and while she was walking in to town, a severe attack of pain in the region of the appendix came on, which was so intense that she was prevented from walking further for about twenty minutes, when it suddenly disappeared. The last attack began with moderate severity on the afternoon of November 12, 1906, after the ingestion of a glass of milk. Vomiting accompanied the attack, and the patient, fearing an abortion, took morphine by mouth. She was seen by me a few hours later, and at that time there was general abdominal tenderness, most marked in the right iliac fossa. The uterus was enlarged to the umbilicus, the full length of the cervix was present, and the os was closed. There was no vaginal discharge, nor any indication of an approaching miscarriage. The temperature was 99.8° F., and the pulse 96, but later increasing to 108. The diagnosis of appendicitis was made, and was a surprise to the patient and her family, as such a condition had never been suggested to them. This diagnosis was confirmed, however, by Dr. Robert Abbe, who saw her with me in consultation, and who considered an operation imperative. As uterine contractions with dilatation of the cervix had taken place within the few hours intervening between the time I telephoned for Doctor Abbe and the time he made the examination, it seemed best, as the case was not at all alarming, to allow the delivery to take place, and a day or two to elapse before operating, the patient being watched most assiduously in the meantime, and everything being arranged for an emergency operation. The patient was delivered easily of the six months' fetus about an hour after Doctor Abbe's examination. She was free from acute pain during the next twen-

ty-nine hours, but suffered from a nagging soreness. The temperature remained below 100° F. and the pulse did not go above 108. Twenty-nine hours after delivery the patient, while lying quietly in bed, complained of sudden severe pain in the præcordium. She became cyanotic, and the nurse could not detect the radial pulse; and within a few moments the respirations had stopped. The course of events seems to have been first an acute exacerbation of the chronic appendicitis, which, according to Doctor Abbe's views, caused traction on old adhesions, and so started up uterine contractions. Twenty-nine hours after delivery a thrombus in one of the uterine sinuses became detached, was washed out into the general circulation, and became impacted in the pulmonary artery, causing almost instant death. A sister of this patient, five years later, also died from pulmonary embolism during the puerperium.

Two cases of premature, partial separation of the normally implanted placenta seemed to me to be unusual enough to be included in this report. This accident has been attributed to traumatism and to nephritis, neither of which conditions was present in either of my cases; neither were abnormally short umbilical cords causative factors.

Case VI. The first case occurred in a normal multipara whose first four confinements had been uneventful. Slight labor pains began on October 19, 1910, and an examination at my office found conditions normal, and the os dilated to the size of a quarter dollar. These light pains continued until the afternoon of the next day, when a gush of about eight ounces of blood occurred during a slight pain. The patient went to bed and sent for me, and on my arrival shortly afterward I found the os fully dilated and no evidence of placenta prævia present. Little gushes of blood accompanied each pain, but the amount was small. Pains were coming every five minutes, and, as the patient's conditions was good (cheeks pink, pulse excellent, and no evidence of concealed hemorrhage) and the fetal heart beat normal, an oxytocic was given, and the patient watched, with everything in readiness for an immediate forceps delivery, if it should be indicated. During the last half hour the amount of blood had slightly increased, perhaps an ounce coming with each pain. The baby was born covered with blood, but cried lustily at once. The uterus contracted well, and the placenta was expressed about five minutes later, being preceded by the passage of an organized clot about five inches long and three wide. The placenta was unusually large, and of perfectly normal appearance, with no evidence of any old hemorrhage, areas of infarction, or calcareous degeneration. The patient made a normal convalescence, and her next delivery, two years later, was uneventful.

Case VII. The second case of partial premature detachment of the placenta was less fortunate, the baby being stillborn. The patient, who had had one normal child, was examined on the 16th of last August, and conditions were normal in every respect. Pains began on the 18th, at term. On my arrival the patient told me that she had felt no fetal movements for the preceding twelve hours, and I was unable to detect any fetal heart sounds. The os dilated rapidly and the mother's condition was excellent. During the second stage a little dark clotted blood accompanied each pain. Labor progressed quickly, and a pallid, pulseless baby was born in less than three hours from the beginning of labor. The placenta showed about a third of its surface covered with dark grumous blood. It seemed curious that the remaining two thirds of the placenta could not supply enough oxygenated blood for the fetal circulation, but the cessation of the previously vigorous fetal movements twelve hours before the advent of labor proved that it could not do so.

I had intended to inflict upon you two cases of contracted pelvis, one a kyphotic and one a justo-minor pelvis (the former was treated by Cæsarean section and the other will be, next month); a case of hydatidiform mole; a case of eclampsia with hemiplegia, and one of placenta prævia with facial paralysis; and to speak of the great prevalence of occipitoposterior positions in my work (twenty per cent.), with almost uniform spontaneous rotation, and undisturbed deliveries, as well as of my expectations of relief from an aching back in substituting the pulmotor for the usual methods of artificial respiration. But time is short, and my reports have already occupied too much of your valuable time. I think, however, that my work has demonstrated, to myself at least, that the life of one who works largely in an obstetrical field is full of the greatest variety and interest; and, in the opportunities it affords for the study of human nature, it is certainly unexcelled.

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THE TREATMENT OF ENDOMETRITIS.*

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The term "endometritis" is one that is familiar to every physician, and should one be asked the meaning of the word he would probably reply, "Inflammation of the endometrium, of course." Unfortunately, in many instances this is about the extent of his knowledge of this condition. He will use the term with profound effect upon his receptive patient, and he will talk glibly of it to a brother practitioner while discussing the diagnosis of a gynecological case. Yet withal, in the majority of instances, close inquiry would elicit the fact that he has a very hazy idea as to the actual pathology of this condition and of its relation to other gynecological diseases.

In order to intelligently comprehend this condition we must have an understanding of its pathology, at least sufficient to form a working basis for the clinician. I am aware that there are many classifications and disputed points from the standpoint of the pathologist, all of which tend to cause confusion; therefore I must ask for indulgence if I take up some of your time with a hasty statement of its present status.

For many years the pathology of endometritis has been based on the conditions found in the endometrium, consisting of changes in its thickness, the number of its glands, and the character of its epithelium and stroma. An acute and a chronic type are recognized. The etiological factor in acute cases can usually be determined, while in the chronic type it is not readily apparent. In chronic cases the hypertrophic state was until recently considered as the final result of chronic inflammatory processes. Consequently, when uterine curettings were submitted to the pathologist he reported the finding of endometritis, hypertrophic, and glandular, according to the increase in the thickness of the mucosa and the glandular changes present.

This was the status of the subject until 1908, when Hitschmann and Adler (1) published the result of their investigations, which has somewhat revolutionized previous theories, and showed that heretofore many of the reports on uterine scrapings submitted by competent pathologists were misleading, if not entirely erroneous. Hitschmann and Adler's work was based on the study of the endometrium in its relation to menstruation, and they have demonstrated that the regular menstrual cycle

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in the normal human female is characterized by cyclical changes in the structure of the endometrium, which changes are identical in appearance with the so called hypertrophic glandular endometritis. Consequently, if curetting is done during the presence of these normal hypertrophic changes in the mucosa, the pathologist, according to his previous light, would report the presence of hypertrophic endometritis when only a physiological condition existed.

Briefly, Hitschmann and Adler find that the endometrium passes through four distinct stages throughout the month. The first, or *premenstrual* stage, begins from six to seven days prior to the appearance of the flow. The endometrium during this time shows an increase in the thickness of the mucosa two or three times that of the resting stage. The glands are enlarged in size and their component cells likewise, and the stroma throughout has assumed a decidual type. In short, it presents the conditions which were previously considered as characteristic of chronic hypertrophic glandular endometritis. The second, or *menstrual* stage, when the blood appears and the picture changes rapidly. A general deturgescence is noted. The glands become flattened; some of the superficial epithelium is cast off. Third, the *postmenstrual* stage, shows the mucosa thin and pale. The glands are narrow, straight, and with contracted lumina, and the epithelial cells are small. Fourth, the *interval* stage. This lasts about two weeks, and shows the mucosa in what we have hitherto considered the normal condition.

Of course, great physiological variations may exist in the duration of the stages and the extent of the changes. At first Hitschmann and Adler believed that the only chronic inflammatory form which can be accepted is endometritis interstitialis, and that all cases of so called hypertrophic glandular endometritis were nothing but normal premenstrual findings. They believed that the presence of *plasma cells*, which accept a specific stain, are alone characteristic of true inflammation. Hitschmann (2) now admits, however, that hyperplasia other than the physiological cyclical degree occurs, but asserts that it is not inflammatory in origin.

In the foregoing remarks, I have quoted freely from the most excellent article recently published by Frank (3), and would refer those interested to Frank's paper for a clear and concise statement of the present status of the pathology of the subject. Numerous investigators have confirmed the fact that cyclical changes take place in the normal endometrium, and it is now generally accepted. However, while a distinct advance has been made, numerous points which are still unsettled are met in endeavoring to harmonize the physiological changes pointed out by Hitschmann and Adler with the clinical standpoint.

It seems reasonable to recognize the normal changes as a temporary hyperplasia and to accept the fact that certain pathological forms of hyperplasia exist which are permanent or stationary. Also, that these permanent types may be caused by chronic inflammation, but that a permanent hyperplasia of the endometrium may exist in the absence of true inflammation. This latter type I believe to be due to disturbances of circulation, and one of the most common conditions that we have to deal with, as I shall endeavor to show later.

Albrecht and Logothetopulos (4) have recently contributed a valuable study to this subject, and I quote their conclusions as follows:

1. The anatomical diagnosis of chronic endometritis is based upon the presence of certain changes in the stroma and bloodvessels, circumscribed or diffuse infiltration of lymphocytes, exudation, hypertrophy, or atrophy (cicatrization) of the stroma, the presence of blood pigment, proliferating bloodvessels and infiltration along the vessels, and inflammatory infiltration in the muscular interstices.

2. In addition to the normal premenstrual hyperplasia, there are certain pathological forms of hyperplasia which are stationary, as:

a. All the transitional forms between hyperplasia and adenoma occurring during the menopause.

b. Postmenstrual and interval hyperplasia.

c. Hyperplasia following prolonged placental retention.

d. Hyperplasia after prolonged hemorrhages.

3. The permanent hyperplasia may be distinguished from the temporary form by certain anatomical features: Mitosis, which is not marked in the latter form, irregularity, as absence of the premenstrual folding of the mucosa, true intraglandular papillary proliferation, twisting and elongation of the glands, thickening and increase in the epithelium due to mitosis, irregular secretion and loss of the typical premenstrual secretion.

4. In chronic inflammation the regularity of the cyclical menstrual phase is disturbed.

5. Chronic inflammation usually causes a proliferation of the uterine glands; hyperplastic and proliferating endometritis is therefore a correct term, but it should be distinguished from the pathological hyperplasia of the uterine mucosa in the absence of inflammation.

Frank states that the classical signs of "endometritis," leucorrhea, menorrhagia, and metrorrhagia are dependent upon the functional activity of the ovaries, the former being the sign of glandular overactivity, and the latter of vascular and stroma stimulation; and that hence in most cases we must devise a more logical treatment than curetting, intrauterine applications, or vaginal douches to produce a cure. He states that the sole method at our disposal to reduce the activity of the ovaries, short of complete ablation, is to expose them to the x ray with the hope of controlling the leucorrhea and the bleeding.

I believe that our clinical results warrant us in taking a more optimistic view as to what we may accomplish in the relief of these classical symptoms in the majority of such cases. If we accept the statement that permanent hyperplastic changes may occur in the absence of inflammation, we must look for its cause in disturbances of the circulation. If chronic passive congestion plays its rôle as a factor in producing pathological changes in other organs of the body, it surely can do so with the uterus.

Until we are shown how to control excessive and diminished ovarian activity with certainty, we must still resort to the curette and local measures. I believe that curetting will never be entirely superseded by other forms of treatment in that large class of cases which suffer from the classical signs of so called "endometritis," viz., leucorrhea, menorrhagia, and metrorrhagia, which present permanent hyperplastic changes in the absence of inflammation, and which are the result of long continued passive congestion. Therefore, I shall present the subject of the treatment of endometritis from the clinical rather than the pathological standpoint.

Endometritis may be cervical or corporeal in its location, but, except in the onset of acute infections, the entire endometrium participates in the inflammation, and for practical purposes we may ignore these differences and consider the condition as involving both the cervix and the body, as is the usual case. It is well to remember that the secretion from the cervical glands, which are of a compound racemose character, is very tenacious, viscid, and thick, while that from the utricular glands is more limpid in character. A mixture of the two is the usual composition of the discharge.

As a working basis, we will divide all cases of endometritis into two varieties: First, those which are the result of infection; and, second, those in which a bacterial origin or sepsis plays no part, but which are the result of purely circulatory disturbances.

In the first, or infective variety, we have acute and chronic types, but the chronic type, on account of loss of virulence of the causative bacteria, or their disappearance, simulates closely the noninfective type, and will be studied in our consideration of this. Acute infective endometritis is caused most frequently by the gonococcus, or by the ordinary pus producing organisms, as the staphylococcus, streptococcus, colon bacillus, etc., which have been introduced by dirty instrumentation by the attending physician in endeavoring to give local treatment or in efforts to induce abortion. The virulence of the disease depends entirely upon the nature of the bacteria producing it. Acute gonorrheal endometritis is very common, commencing in the cervical endometrium, where, if let judiciously alone, it may confine itself, but unfortunately often extending to the corporeal endometrium, and almost invariably extending there if local interference in the way of intrauterine treatment is attempted.

So long as the disease remains confined to the cervical canal the woman notices little disturbance other than an increase in her leucorrheal discharge and a feeling of weight and tenderness in the uterus, similar to what she is accustomed to notice at the approach of the menstrual periods. This accounts for the frequency with which these patients fail to ask advice, so that the disease goes unnoticed until the lover comes along and gets infected. If the disease extends to the tubes, as it is very prone to do if it reaches the corporeal endometrium, acute pyosalpinx, pelvic peritonitis, severe invalidism, laparotomy, ablation of the appendages, with resultant sterility and surgical menopause, make up the familiar picture, with a wrecked body and life as a finale. Fortunately for these patients, the infection does not usually cause death, as a general sepsis is not induced, the manifestations of the gonococcus being local and the peritonitis it produces not of a virulent type. If, however, the infection is due to the other organisms mentioned, especially the streptococcus, general septic peritonitis of a virulent type and pyæmia are apt to occur, with fatal result.

The second variety of endometritis, the noninfective type, where no organism has been introduced as a causative factor, and which is dependent entirely upon circulatory changes, is by far the most frequent form of the disease in my opinion, and is the one that is practically always associated with nonbacterial uterine pathology. This type, then, is caused by something altering the normal ingress and egress of the blood stream as it flows through the network of capillaries which are situated in the uterine mucosa. As obstruction to the circulation on the venous side is the most easily interrupted elsewhere in the body, so it is here, and venous stasis or passive congestion is the frequent condition found in the uterus, which must, in time, produce, first, disturbance in the glands of the endometrium, and later, actual structural changes in the endometrium itself.

A glance at the venous anatomy of the woman shows us that she was never originally constructed to walk upright in the erect posture. The ovarian veins are very long and pass through the top of the broad ligaments just under the infundibulopelvic ligaments to the side walls of the pelvis, and then pass up the sides of the spinal column until, on the left side, the left vein opens into the left renal vein at a right angle, discharging into a blood stream much greater than itself, and on the right side the right vein opens into the inferior vena cava, a little lower down. These veins, in spite of their great length, have no valves. We can easily see that if the woman walked on all fours, like our progenitors, the apes and other lower animals, these peculiarities of the ovarian veins would be aids, rather than hindrances, to the onward flow of the venous blood stream, as the pelvis would be at a higher elevation than the thorax, and the valveless veins would allow a free flow down hill into the larger venous trunks. Likewise, retrodisplacements and prolapse of the uterus would have gravity to contend with and would not be, as now, such frequent factors in the production of venous engorgement of these parts.

As we have foreshadowed, anything that will impede the progress of the venous blood current from the uterus will cause endometritis. If the histology of the corporeal uterine mucosa is brought to mind, you will remember that it is composed of a single layer of columnar epithelium, and that throughout its structure it contains simple tubular glands lined with this same epithelium. At the base of these glands in the submucosa ramify the arterioles and venules which send capillary branches to the back of their epithelial lining. This endometrium is usually less than a line in thickness, and macroscopically presents a smooth, glistening, moist appearance, similar to the mucous membrane lining the inside of the cheek. The physiological working of these glands is the same here as that of glands elsewhere in the body. On stimulus (as the odor of food in the case of the salivary glands, ovarian in this case) there is a determination of arterial blood to the gland structure controlled by the vasomotor mechanism, and from this abundant fresh arterial blood the epithelial cells elaborate their particular secretion, which is poured out into the lumen of the gland and eventually finds its way to the surface of the mucous membrane. One of the purposes of this secretion in the uterine mucous membrane is undoubtedly to keep it moist, but should these glands

work to excess and produce more secretion than is necessary for that purpose, it is evident that the excess secretion will find its way out of the uterus through the cervical canal, and will appear in the vagina as leucorrhea. In other words, there should be a sufficient moisture to keep the mucous lining of the uterus in a normal and healthy condition, just as in the buccal cavity, and not a continuous excess which will produce a "drooling" similar to salivation.

The mechanism of the production of this normal secretion in the cavity of the uterus being understood, it must be evident that if a continuous excess of blood is forced upon these utricular glands they will work overtime and produce an amount of secretion greater than is required, and that if this excess of blood is venous in character, instead of freshly aerated arterial blood, the quality of the secretion produced will be abnormal. Thus, any cause that induces a state of chronic venous congestion in the uterine mucosa will produce an excessive secretion by the uterine glands of an abnormal character. Furthermore, in addition to this functional disturbance of the endometrium, long continued passive congestion will produce organic or structural changes in this membrane, just as it will elsewhere in the organs of the body,—as, for instance, cirrhosis of the liver and nephritis. The condition present in long continued venous congestion is one of "forced feeding with a poor quality of nutriment"—venous blood instead of arterial blood—and the result is an excessive and exuberant growth of the epithelial cells lining the glands and the surface of the mucosa, until they are abnormally large and of unstable fungus type, due to their rapid growth from poor nourishment. They are embryonic in structure and simulate the so called "proud flesh" that we see on the margins of a varicose ulcer. There is also an increased proliferation of the connective tissue cells and elements, and as the cell elements or the connective tissue elements predominate, so we get the classification of the pathologists of the so called "glandular endometritis" and fibrous or interstitial endometritis, or both combined. The terms "hypertrophic," "hyperplastic," and "fungoid" endometritis are all descriptive of the type we have just described.

The macroscopical appearance of the lining of the uterus in these cases has now changed from that of the normal, smooth membrane to a rough, shaggy, mossy, fungoid, and greatly thickened mucosa—even up to half an inch in some cases. There is an actual increase in the number as well as the size of the glands, and, as the unstable epithelium brushes off easily, there is frequently a blood streaked leucorrhea, and the menstrual flow is excessive and appears early and sometimes often. The so called "erosion" of the cervix is not an erosion at all. Instead of the loss of superficial epithelium from ulceration or trauma, there is an actual increase or hypertrophy of the epithelium which grows downward from the cervical canal and spreads itself outward on the surface of the vaginal portion of the cervix. It is thus an external manifestation of the interior condition of hypertrophic endometritis.

In the beginning of this paper I said that we would consider chronic endometritis of an infective origin when discussing endometrititis due to circulatory changes. The picture that is presented in cases of chronic endometritis which were originally of an acute infective character does not differ greatly from that just described, except that these cases are almost always of a severe type, and are characterized by the profuseness of the leucorrheal discharge, which is more purulent and foul in its nature. There is an absence of the bacteria, or at least they are no longer active in old cases. Palfner Findley, in his work on *Gynecological Diagnosis*, states that the profuseness and persistence of a leucorrheal discharge in a patient, in spite of all treatment, is pathognomonic of a previous gonorrheal origin. Hysterectomy is the only cure for such patients.

In contradistinction to the hypertrophic type of endometritis, due to venous congestion, we have the opposite condition of atrophic endometritis, which is due to an insufficiency of blood supply, with the result that the mucosa atrophies and areas of it may even become necrosed on account of atrophic changes occurring in the arterioles. It is commonly observed in the establishment of the menopause and in old women, when it is spoken of as "senile endometritis."

Having thus briefly described the pathology of endometritis, we are now better prepared to make a diagnosis and to treat the disease intelligently. In differentiating a chronic type of endometritis, we must first bear in mind the difference between leucorrhea and pus. A discharge present in the vagina and coming from the cervix is not necessarily pus because it is white in color. The non-infected secretion from the cervical and utricular glands is clear until it is rendered turbid or white by reason of the normal acidity of the vagina. The characteristics of pus (gonorrheal pus, for instance) are familiar to you all, and whenever real pus is seen to issue from the cervical canal, with the external os showing the cardinal signs of acute inflammation, you may rest assured that the case is one of infection, gonorrheal or otherwise. Which microorganism is it? You cannot tell without the aid of a microscope. Likewise, if you are in doubt as to whether it is a leucorrheal discharge or pus that you are dealing with, it is to the microscope that you must resort to settle the question. A drop of the discharge is transferred to a glass slide with a sterile platinum loop, and a smear is made, dried, and stained for gonococci, and examined while the patient is on the table, or, if it is preferred, the specimen is sent to a pathologist for an expert opinion. In all our medical schools to-day every student is taught the simple technic necessary, and has been given training in microscopical diagnosis. Having determined that the case is one of acute infection, be it gonorrheal or otherwise, the treatment is simple—*leave it alone.* Do not attempt to destroy the infection inside the uterus by any of the antiseptics or silver salts. Any local interference with the cervical cavity by local applications will almost surely result in driving the disease up into the body of the uterus, and from there to the tubes, with their re-

sulting destruction. Above all, I implore you not to endeavor to "curette out" the infection. In what better way could you vaccinate the deep tissues of the uterus with gonococcus, or the other more virulent and dangerous organisms, than by scraping away the epithelium and rubbing in the virus? I should hesitate to say how many cases of hopelessly damaged female genitalia, with often ultimate death, that I have seen in consultation or that have come into my service at the hospital as a result of such inexcusable—yea, criminal—ignorance on the part of the family physician. Vaginal antiseptic douches are permissible, and should be employed to protect the external genitals, if they are not already involved, and for purposes of cleanliness. Absolute rest and quiet are to be enforced, in the hope that the infection may run out its virulence without extending to the more dangerous localities. If extension or general infection does occur, the case becomes a surgical one, which time does not permit our discussing in this paper. Probably the future treatment of the acute condition in these cases lies in the direction of vaccine therapy. Already much has been accomplished in this line, and some remarkable successes have been obtained in certain infections, especially where autogenous vaccines have been employed.

In the chronic types of the disease, the most frequent evidence of its existence that Nature has presented to us is the leucorrheal discharge. The extent of the disease may vary from a temporary overactivity of the uterine glands, due to congestion, to a condition where there is extensive thickening and structural changes in the endometrium. The patients of the latter type generally give a history of increased or profuse menstruation, and if the disease is extensive, metrorrhagia is observed. The actual condition of the endometrium can be studied by the diagnostic curette. This is a very small, dull, spoonshaped curette that can be passed through the internal os without difficulty in these patients, and by drawing it slowly over the surface of the endometrium, scrapings are obtained which, if floated in water, will give a very good idea of the character of the membrane. Of course, the instrument must be boiled before it is introduced under direct vision into the uterine canal. The most important thing to diagnosticate in these cases, however, is not the presence of endometritis, which is self evident, but the cause of the passive congestion. We cannot hope to cure these patients until we find the cause of the venous stasis and can correct it. The causes are various. For instance, the patient may be a victim of chronic constipation, in which case the sigmoid flexure is a storehouse for feces, and pressure on the collapsible left ovarian vein is sure to result, as the sigmoid lies adjacent to the left broad ligament. The portal circulation is also interfered with, all the venous structures in the pelvis are engorged, and the patient has a congestion of her uterine glands, just as she has hemorrhoids. To cure her leucorrhea it is evident that an appropriate pill taken daily, to insure a proper evacuation of her large intestine, is the all important treatment. Perhaps the uterus is markedly retroverted. If so, it is plain that there must be a partial twist in the tops of the broad ligaments, just where these collapsible ovarian veins pass through them, and a venous back pressure is the result, with the inevitable endometritis as an accompaniment of the retrodisplacement. The remedy is again obvious—the uterus must be replaced and maintained in its proper position, to allow of the proper venous flow and the relief of the endometrium.

Again, the uterus may be in place and the bowels regular in habit, but the patient may have a noncompensating mitral regurgitation. Naturally, there is back pressure on the whole venous system, the uterus suffers with the rest of the organs, and the patient has a troublesome leucorrhea. Digitalis is the remedy to overcome the excessive discharge in this case. Or, the patient may be a poorly nourished, flabby muscled, debilitated woman, with scarcely strength to drag herself from the washtubs to attend to the wants of her many children. She has an atonic condition of her circulation as a result of general weakness, and, of course, there is venous stasis with resulting symptoms. It is plain that change of environment and rest is needed to cure her leucorrhea, although it may be difficult to apply the remedy. The woman who wears tight corsets, eats largely of candy, and is too lazy to walk, is pretty certain to have a lazy circulation, and a little of the active exercise that her poorer sister is obliged to take will improve the endometritis here.

But what about the curette as a cure for endometritis? I have purposely left the use of the curette to the last, because as a rule it is the first and last thought of the general practitioner. I have tried to emphasize to you the importance of appreciating that the basic cause of the venous congestion that results in the endometritis is the essential factor to be determined, if we hope to get a permanent cure. The curette is a valuable adjunct by scraping away the hypertrophied mucosa, with its enlarged, unstable epithelium, so that a proper balance in the circulation having been restored by the measures appropriate to the particular case in hand, a new growth of epithelium of a healthy and stable type may spring up and the endometrium be restored to its normal condition. If the curette alone is used, the patient will be benefited for a short time only, and later the former condition will surely return. I perhaps can best fix in your minds the principles involved if I ask you to compare the treatment of a case of hypertrophic endometritis to the familiar treatment of a varicose ulcer of the leg. The factors in the case are very similar. You have a deficient circulation, venous stasis, as a reason why the ulcer will not heal; owing to the venous congestion, you have exuberant granulation cells of a poor, unstable, and mushroom like character, which cover the surface of the ulcer and which you call "proud flesh." If you only take a curette and scrape away this "proud flesh," you get a temporary improvement, but a relapse to the former state is sure to occur. So you not only curette away the diseased epithelium, but you elevate and strap the leg to overcome the venous stasis and thus improve the circulation, and the ulcer heals as a properly nourished and healthy epithelium develops on its surface. Formerly it

was the custom (and is to-day among many general practitioners) to endeavor to remove the exuberant tissue in the uterus by the local application of caustics, as, for instance, tincture of iodine, carbolic acid, silver nitrate, zinc chloride, etc. This is, at the best, a very slow and unsatisfactory method, and the curette is so much superior that it has practically supplanted the use of caustics in the hands of gynecologists.

Now, a word as to the douche. This is the most frequently resorted to remedy of the general practitioner when a patient comes to him to be cured of her leucorrhea. He is always seeking for the proper medication to put in the douche to cure the discharge, and the medical journals are filled with advertisements of all kinds of powders, etc., which are warranted to produce marvelous results. The idea in his mind is to find something that is antiseptic and astringent. From what we have already learned, it must be plain that it is an absurdity to employ an antiseptic to cure a leucorrheal discharge unless organisms are present to be destroyed. Therefore the use of antiseptic douches must necessarily be limited to the class of cases that are acute infections. Can we not then cure the large class of cases of a noninfective type by the use of an astringent? We might perhaps obtain some lessening of the discharge by astringing the glands of the uterine cavity, if it were possible for the douche water to come in direct contact with them, but it is self evident that a vaginal douche cannot possibly accomplish this object. Why then do we get a beneficial result when we employ vaginal douches for leucorrhea? Because if you only have the woman employ them often enough she will never see the vaginal discharge, because it is washed away before it can accumulate in the vagina in a sufficient quantity to cause annoyance. So long as she takes frequent vaginal washings, the appearance of the leucorrhea will not be noticed, but as soon as she stops, it is there just as bad as ever. Vaginal douches, however, are of benefit if properly employed, but not by the use of any medication they may contain. The only advantage of a douche in these cases is by virtue of its heat; but it is important that the heat is properly employed if we wish to get results. If you put your hand in water at a temperature of 100° F. for a few seconds, when you take it out you will find that it is reddened and all the capillaries are dilated, and there is a state of congestion present. If, however, you put your hand in water at a temperature of 115° F., and leave it there for four or five minutes, you will notice that your hand is blanched and contracted like a washerwoman's. Herein you have the gist of the proper use of a douche. You must have a long application of excessive heat to produce contraction of the capillaries, if you wish to relieve an already existing state of congestion. Yet let us see how the woman who has been told to take a douche, without detailed instructions, goes about it. She buys the smallest douche bag possible, because it is the cheapest. She then makes the water a comfortably warm temperature, which is about from 95° to 100° F. She then sits on the toilet to take the douche, because it is convenient. The result is obvious. She gets a result in her uterus similar to that first described in the hand, and she increases her uterine congestion and makes herself worse instead of better. Therefore, detailed instructions are essential to success. The douche bag must be of the largest, the water must be at 112° to 115° F., and the woman must lie down on a douche pan with her clothes loosened at the waist line, in order that the hot water may balloon the vault of the vagina and circulate at the base of the broad ligaments. Always instruct the patient to put something in the douche, because she will have no faith in plain water; but appreciate the fact that it is for psychic reasons, and not therapeutic ones. A tablespoonful of borax is found in every household, and makes a cleansing alkaline solution. There is one expedient that I believe to be of great value in all cases of pelvic congestion, and that is the knee-chest posture. If the patient is instructed to assume this position every night on retiring for a period of five minutes by the watch, and then turns directly on her side in the semiprone, or Sims's position, and goes to sleep in that posture, the pelvic veins will have been thoroughly drained of their contents and will remain relieved of their engorgement throughout the night. Glycerin tampons are also of value by reason of the hygroscopic action of the glycerin, abstracting large quantities of water from the tissues, and thus relieving the tension in the capillaries and allowing of an improvement in the circulation. Douches, tampons, and the knee-chest posture are simply adjuncts to be used in improving the pelvis circulation, and they are of benefit in just so far as they accomplish this object.

To summarize, the following are the essential factors to be borne in mind in the treatment of endometritis:

1. That leucorrhea, the most prominent manifestation of the disease, comes from the uterine cavity, and not from the vagina.

2. That endometritis may be divided into two great classes, those of bacterial origin and those of nonbacterial origin.

3. That in the acute infective cases the discharge is pus containing, active, demonstrable organisms.

4. That in acute infective cases the treatment to be observed is masterly inactivity.

5. That in the common variety of so called chronic hyperplastic endometritis, which is by far the most frequent type we have to deal with, there is no infection, and the leucorrheal discharge is an excessive secretion from the cervical and utricular glands, the result of venous congestion.

6. That the first and most important principle to be observed in treating these cases is to determine the cause of the venous stasis and to treat the same by appropriate measures.

7. That the curette is our most valuable means for removing the greatly thickened and diseased endometrium, but if it is used alone, without correcting the cause, only temporary relief of symptoms is obtained.

8. That vaginal douches, glycerin packs, and postural methods, if properly employed, are valuable adjuncts in aiding and improving the pelvic circulation.

9. That in the class of cases which are probably dependent upon disturbed ovarian function (either excessive or diminished), such as in the preclimacteric menorrhagias and metrorrhagias, arteriosclerotic uteri, chronic metritis, fibrosis, etc., and which are not benefited by the curette and local measures, we must look for a cure in the direction of ovarian control, possibly by the x ray or by sera from antagonistic glands of internal secretion; otherwise complete ablation of the ovaries or hysterectomy is our only resort.

10. That in submitting curettings to the pathologist it is imperative that the relation of the time of the curetting to the menstruation be stated, in order to obtain an opinion of value.

In conclusion, let me say that if I have been able to clear the atmosphere for you on a somewhat hazy subject, so that you may be able to treat this very common disease in a more intelligent way and with more satisfaction, not only to your patients but to yourselves, I shall feel amply rewarded in that the purpose of this paper has been accomplished.

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71 WEST FIFTIETH STREET.

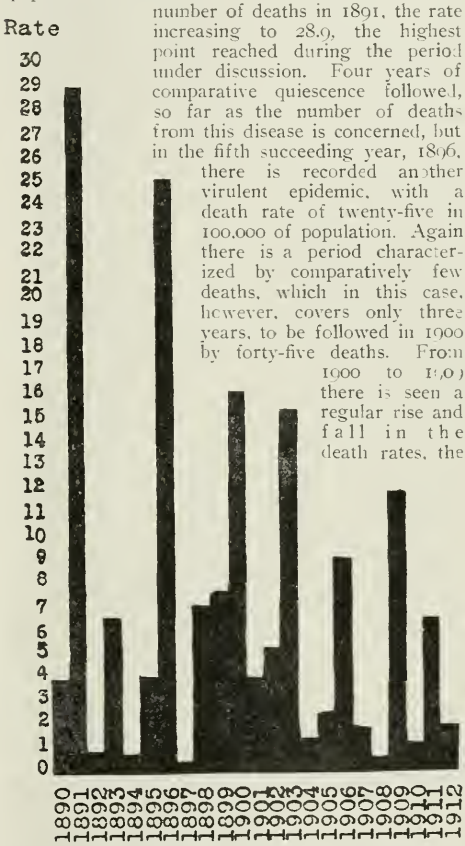
MEASLES: PERIODIC CYCLES OF VIRULENCE.

BY HUGH ARBUTHNOT BROWN, M. D., Washington, D. C.

As is well known, most, if not all, of the highly contagious diseases present more or less clearly defined periodic cycles of prevalence and of virulence. Years during which the disease is to a large extent quiescent or of low virulence will be followed by widespread epidemics accompanied by high mortality. This characteristic has been often recorded, and, indeed, it has been stated that it is often possible to predict with reasonable certainty that in a specified locality there will occur during one year a comparatively small number of cases of one of these diseases, with a correspondingly small number of deaths, while in the succeeding year there will in all probability be a large increase in the number of cases and in the virulence of the contagium.

A knowledge of this characteristic may be used to advantage by health officers and physicians in preparing for an expected epidemic, as was done in 1910 by Dr. Ernest C. Levy,[1] Chief Health Officer of the city of Richmond, Virginia. A careful study of the death rates from measles in preceding years and a knowledge of this periodic action enabled Doctor Levy to predict a coming epidemic with absolute certainty and to take precautionary measures to keep it in check.

An interesting example of the periodic increase in the number of deaths from measles, with more or less well defined cycles of virulence, is furnished by a study of the death rates from this disease in the city of Washington, D. C., during the past twenty-three years. The apparent cycles are clearly illustrated in the accompanying table and diagram. Immediately following the year 1890, when only thirteen deaths occurred from this disease, corresponding to a death rate of 3.9 in 100,000 of population, there is a tremendous increase in the number of deaths in 1891, the rate increasing to 28.9, the highest point reached during the period under discussion. Four years of comparative quiescence followed, so far as the number of deaths from this disease is concerned, but in the fifth succeeding year, 1896, there is recorded another virulent epidemic, with a death rate of twenty-five in 100,000 of population. Again there is a period characterized by comparatively few deaths, which in this case, however, covers only three years, to be followed in 1900 by forty-five deaths. From 1900 to 1909 there is seen a regular rise and fall in the death rates, the



Death rates from measles in 100,000 of population, Washington, D. C.

high rate in 1900 being followed by comparatively low rates in the two succeeding years, which in turn are followed by forty-five deaths in 1903—the same number as in 1900, but corresponding to a slightly lower death rate because of the increase in population. This three year cycle of virulence continues with surprising regularity during the ten year period from 1900 to 1909, and, as might have been predicted, the year 1910 was one of low mortality from the disease. This regularity is, however, broken in 1911, in which year we have the apparent beginning of a new cycle of a different type. The fact that a year showing a high death rate is almost invariably followed by one or more with extremely low rates is probably due in part

[1] *Annual Report of the Health Department of the City of Richmond, Va.*, for the year ending December 31, 1910.

to an attenuation of the contagium, resulting in a comparatively nonvirulent type of the disease, and also in part to the fact that health officers, physicians, and the public in general, after experiencing the results of a widespread, virulent epidemic of any disease, are more keenly alert to prevent a recurrence in the succeeding year. Perhaps, also, after experiencing a year or two of comparative freedom from the disease, the feeling of security leads to some relaxation, at least on the part of many physicians and the public, of former vigilance in reporting suspected cases and properly isolating the patients, and this, coupled in many cases with an increased virulence of the contagium, results in another epidemic with a high death rate.

Perhaps the most striking feature, as indicated by the diagram, regardless even of the apparent cycles of virulence, is the steady decrease in the death rate: the high points being, successively, 28.9 in 1891, 25.0 in 1896, 16.1 in 1900, 15.3 in 1903, 9.0 in 1906, 11.9 in 1909, and 6.5 in 1911. The high points in the later years corespond to the low points fifteen and twenty years previous. Thus, the comparatively low death rates in 1893, 1898, and 1899 are only slightly lower than the comparatively high rates in 1906, 1909, and 1911. On this basis alone the prediction might be made with a reasonable degree of certainty that the death rate in 1913 will probably not be materially higher, if at all, than at any time during the preceding six or seven years, with a fair possibility that it will be even lower than in any of the recent years of high mortality from this disease. If it is true that in 1911 a new cycle of virulence was initiated, with alternating years of high and low death rates, we may expect in 1913 a comparatively high rate, that is, one approximating 9 or 10 in 100,000 of population. This would be equally true, although the rate would probably be lower, if there were to be a repetition of the apparent cycle which occurred between 1891 and 1896. Certainly the rates shown in the years 1909 to 1912 bear a rather striking resemblance, on a smaller scale, to those which occurred in 1891, 1892, 1893, and 1894. In this case we might expect a rate in 1913 approximating 4 or 5 in 100,000. On the other hand, if the three year cycle with a two year interval between years showing high death rates, such as occurred between 1900 and 1909, has been only temporarily discontinued by the apparent discrepancy occurring in 1911, we may look for a low rate in 1913, approximating 1 or 2 in 100,000.

An average of the rates in 1906, 1909, and 1911 amounts to 9.1, while an average of those in 1907, 1908, 1910, and 1912 amounts to 1.3. On the basis of the steady decrease in the rates since 1891 the indications are, of course, all in favor of a rate in 1913 not higher than 9 or 10 per 100,000, while the prediction might be made with a reasonable degree of certainty that the rate will not exceed 3 or 4.

WASHINGTON, D. C.

Year.	Deaths from measles.	Death rate in 100,000 of population.
1890	13	3.9
1891	70	28.9
1892	2	0.8
1893	17	6.5
1894	2	0.7
1895	11	4.0
1896	69	25.0
1897	1	0.4
1898	20	7.0
1899	22	7.6
1900	45	16.1
1901	11	3.9
1902	15	5.2
1903	45	15.3
1904	4	1.3
1905	8	2.6
1906	28	9.0
1907	6	1.9
1908	2	0.6
1909	39	11.9
1910	4	1.2
1911	22	6.5
1912	7	2.0

306 Fourth Street, S. E.

NOTES ON THE DELETERIOUS EFFECTS OF SALVARSAN FROM AN OTOLOGICAL STANDPOINT.*

By Alfred Kahn, M. D.,
New York.

My interest in this subject is due to the fact that a patient came under my observation, at the clinic of the University and Bellevue Hospital Medical College, suffering with deafness in both ears, due, as he thought and as these patients generally think, to the effects of an injection (salvarsan) which he had received some time previous. This case is as follows:

Barney B., aged forty years, male, came to our clinic September 5, 1912. He gave a history of syphilis. During the second stage he had had an injection of salvarsan. About three weeks later he became *suddenly* deaf in his right ear; several days later he complained of deafness in his left ear; he now complained of pain in the head of a dull character and of head noises. He gave no previous history of ear trouble. The Wassermann reaction at this time was negative; the patient did not show any external signs of syphilis, or any sign whatever of syphilis except an old scar on his tongue, which had a specific appearance. I do not know whether the Wassermann reaction was negative because of the injection of the salvarsan or because of the fact that perhaps the patient never had syphilis. This is important, as you will appreciate as I go into this discussion further.

Physical examination of ear.—The patient was entirely deaf so far as forced whisper, loud voice, or the entire scale of tuning forks were concerned. The Weber, Schwabach, and Renne tests, together with all bone conduction, were negative. Jumping forward and backward, and hopping, the patient had a tendency to fall toward the right. (This test showed that the involvement on the two sides was unequal, or that the disease had made more progress on one side than on the other. If the disease on both sides had been equal, the patient would not have had a tendency to fall to either side.)

Nystagmus.—There was an extremely slight amount of nystagmus on stimulating both ears by the turning test, but it was greatly reduced (ten to fifteen seconds in time). The caloric test gave a similar reaction. This showed that the labyrinth was practically inactive, though it did not show that it was destroyed, or that the lesion was

*Read before the Section in Dermatology, New York Academy of Medicine, April 1, 1913.

located in the labyrinth. There was a good chance that the lesion was located in the trunk of the auditory nerve. This is an important point in the discussion.

The questions to be answered were: Was the trouble due to syphilis? Was the trouble due to the injection of salvarsan? Was the trouble due indirectly to syphilis through the action of salvarsan? I at first thought I had a very rare condition, but a number of similar cases have been reported, and the question is a very live and most important one. I will first discuss those cases which occurred before the days of salvarsan; then those occurring during the salvarsan period, and the various views on the subject.

Cases before the days of salvarsan.—Perkins reports the case of J. S., aged thirty, who consulted him for marked impairment of hearing in right ear which existed for two days. This patient improved under the treatment with potassium iodide. Benario reports twenty-nine cases of neurorecurrence after mercury. Ten of these involve the auditory nerves. These patients were practically all improved or cured through the use of salvarsan. Otto Meyer and Professor Habbermann reported 131 cases before the days of salvarsan. These cases, in one way or another, involved the acoustic apparatus. Mauriac collected, prior to 1879, 168 cases of syphilis of the central nerve system. Naunyn collected and observed 305 cases of cerebral syphilis.

Cases occurring since the discovery of salvarsan.—Benario has collected 126 cases from reports of over 14,000 cases treated by salvarsan. In the 126 cases the auditory nerve was involved sixty-two times; the optic, forty-one times; oculomotor, eight times; trochlear, twice; abducens, three times; and facial, ten times. (The eighth nerve seems to have a peculiar predilection.) Benario calls attention to the greater danger of neurorecurrence in extragenital infections, and especially in chancres of the head. In his 126 cases, thirteen patients had extragenital chancres, and nine cases were of the head. Cases presenting the papular syphilide were more liable to be effected, as in sixty-six in which the variety of skin eruption was specified, thirty-six were papular. Nonne has called attention to the fact that the papular exanthem denotes a malignant type of syphilis, liable to be followed by cerebral complications. Benario mentions the fact that in 3,200 cases treated by Arning, Doerr, Fruhaut, Duhot, Fordyce, Neisser, and others, no neurorecurrences have been observed. He concludes that the nerve involvements are specific in nature, and not due to the salvarsan, and gives the following reasons for this belief:

1. The long interval between the injection and the appearance of nerve symptoms.

2. The character of the process in optic nerve involvements, which is an inflammation or irritation in most cases, as shown by Schanz and Tobias.

3. The condition appears during a determined period of syphilis, which is followed by a comparison of these patients treated with salvarsan with those of Mauriac, who reports fifty-three, or twenty per cent., as occurring within the first year after infection, as shown in the following table from Benario:

Month.	Mauriac: Cases.		Month.	Salvarsan: Cases.	
1	3		1	5	
2	4	12.8 per cent.	2	10	12.6 per cent.
3	5		3	15	
4	7	24 per cent.	4	26	24.6 per cent.
5	4		5	29	
6	6	18.4 per cent.	6	17	38.9 per cent.
8	2		8	5	
9	2	7.2 per cent.	9	4	7.6 per cent.
10-14	20		10-14	8	

4. Their curability by specific medication, especially salvarsan.

5. The symptoms seem more liable to follow small doses of salvarsan, which, of course, would not be the case if they were caused by the toxicity of the remedy.

6. And that exactly the same symptoms follow after the treatment with mercury.

Considering the subject from the standpoint of salvarsan as a causative factor, H. Frey observed a syphilitic for three months. Internal ear involvement occurred two months after the administration. This was followed in five days by a dermal recurrence. B. Spiethoff reports a case in which, six weeks after injection of salvarsan, there was internal ear involvement. Wassermann reaction positive; mixed treatment for five days without effect. Two new injections of salvarsan produced amelioration of the symptoms in several days. Werthier reports two cases of internal ear involvement following salvarsan which disappeared under mercury, and a third which persisted in spite of mercurial treatment, but disappeared under salvarsan. Geronne and Gutmann, in six cases, obtained a cure or amelioration of the internal ear involvement following salvarsan by the further administration of the same remedy (Cases IV, IX, XI, XII, and XIII), and in a seventh case under mixed treatment (Case VIII); while in one patient (Case X), who would not accept another injection, the condition persisted. Ehrman reports a case of internal ear involvement after salvarsan cured by a course of mercurial inunctions, while M. V. Ziessl reports still another cured by mercurial treatment.

On the other hand, Peritz reports a case of neurorecurrence of the eighth nerve following salvarsan which did not disappear even after the third injection of the drug, and there are some others of a like nature recorded. Ingersheimer has made a comparative study of atoxyl and salvarsan. He arrives at the conclusion that the acid radical phenylarsenic is the cause of the toxicity of the atoxyl. This is not found in salvarsan. After injection of salvarsan in dogs and cats he was unable to find the lesions characteristic of poisoning by atoxyl. He therefore thinks that poisoning by arsenobenzol is not to be feared. Of interest in this connection are the experiments of Paul Rothig, who, by injecting arsacetin into ordinary mice caused them to perform the movements of the Japanese dancing mice and found upon examination of the nervous system, besides various other lesions, a degeneration of the vestibular nerves. According to Seegman, Beck, at Urbantschitsch's clinic, has produced the same result with salvarsan. So it seems that these preparations of arsenic have (as far as white mice are concerned) what we may call a selective affinity for the vestibular nerve, or find here a point of least resistance. That the earlier ear symptoms following salvarsan (those likened to the

Herxheimer reaction) are for the most part at least limited to the vestibular apparatus, is somewhat suggestive in this connection. Victor Urbantschitsch notes that in sixty cases sent to the ear clinic for examination after injection of salvarsan, five had disturbances of the vestibular functions, appearing three hours, five hours, and three days respectively after injection, and disappearing in from ten to fifteen days later. In the fourth case the symptoms appeared five weeks after injection and disappeared in seven weeks, and in the fifth case they appeared four weeks after the administration and were still present in the tenth week. Biehl reports the case of a soldier who had vestibular symptoms for two hours after injection, hearing remaining unaffected. O. Beck has taken up the subject of vestibular involvement after salvarsan and has reported a number of interesting cases and discussed the possibility of exactly locating the lesion by tests. He is inclined to consider the condition as analogous to the Herxheimer reaction.

In my own case, the Wassermann reaction was negative and continually remained negative under repeated trials. I do not know whether this was due to the fact that the patient did not have syphilis, or whether it was due to the previous injection of salvarsan, which the patient received before he came under our observation. If the patient did not have syphilis in the first place, it would have a tendency to favor salvarsan as the cause. If the disease was localized in the acoustic apparatus, the general system being free, due to the injection of the salvarsan, it does seem peculiar in that after a length of time the localized foci would not react and again cause a systemic infection, and then produce a positive Wassermann reaction. We know that there are other drugs which have a peculiar action upon the auditory apparatus. I have in mind quinine, which causes that peculiar tinnitus when taken in large quantities. May not salvarsan have some peculiar selective effect for the ear?

Various theories have been advanced to account for these nerve lesions. Ehrlich contends that salvarsan produces sterilization through the blood, except in some of the osseous canals through which the cerebral nerves pass. Here, the circulation being sluggish, a few spirochetes are enabled to escape the action of the remedy and proliferate, causing an inflammation (an osteoperiostitis perhaps) and swelling, with pressure upon the nerve with consequent interference with function. Nichols advances the theory that after the administration of salvarsan most of the spirochetes being killed at once, no natural resistance is established, so that some focus in the nervous system which has escaped finds its development unopposed after the elimination of the salvarsan. After mercurial treatment natural resistance is established, as the spirillæ are not killed so rapidly. Both of these theories are consistent with the observations of the serum reactions In a great many of these patients neurorecurrence develops, while the Wassermann reaction is negative. Later, as a rule, if treatment is not promptly instituted, it becomes positive, while in a certain number the reaction has been positive at the time of the neurorecurrence. The presence of a small focus of the spirochetes may occur with a negative reaction, but as they develop and their presence becomes general the reaction changes to positive.

Another view is along the line of the Herxheimer reaction on the skin. Through the action of the arsenobenzol upon the spirochetes, these organisms seem to react for a final stand. This reaction produces an increased activity in the skin lesions and increases the dermal symptoms. A similar action seems to take place where nerve tissue is involved A peculiar point in my case is that first the right ear was affected, and that several days following this the patient became deaf in his left ear. This seems to show a peculiar selective affinity for the auditory nerve, and statistics also seem to bear this out. I cannot account for this peculiar selection, unless it be along the line of the theory advanced by Ehrlich. In this connection it might be of interest to know if there are not other cranial nerves also at times involved in syphilitic lesions, and that if death could not really occur from such a lesion. I have in mind a neurorecurrence of the pneumogastric.

This case that I have reported teaches us that we should never inject salvarsan until we have made a sure diagnosis. It must not be forgotten that the administration of salvarsan may have deleterious effects, and that it is therefore to be used with caution. It would seem best that before administering it, we have some evidence of syphilis, either from clinical symptoms or from the Wassermann reaction. Perkins has suggested that the best way to prevent nerve involvement after salvarsan is to associate its administration with mercury and potassium iodide, and to repeat the injection as often as may be necessary. A wiser plan would seem to be to first treat with mercury or potassium iodide, and after some reaction has taken place in the system (to be judged by clinical improvement or gauged by the intensity of the Wassermann reaction) to then use salvarsan. After the development of the neurorecurrence the best plan seems to be to inject additional doses of salvarsan. This, however, has not proved effective in my case, and I understand the results have been similar in the hands of others. Judging from the literature on the subject, however, good results have been reported where this procedure has been followed out.

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7 EAST THIRTY-SECOND STREET.

THE USE OF THE METRANOIKTER IN THE TREATMENT OF DYSMENORRHEA AND STERILITY.

BY PHILIP F. WILLIAMS, M. D.,

Philadelphia,

Assistant Surgeon to the Maternity Dispensary, Hospital of the University of Pennsylvania.

Among the etiological factors of dysmenorrhea and sterility has been associated the infantile or small adult type of uterus with a long conical cer-

vix and pinhole external os. Often an undue anterior bending or anteflexion is present. This type of uterus represents a cessation of development of the uterine muscle at an early stage. In such cases spasmodic dysmenorrhea and primary sterility are quite frequently found. The symptom complex is essentially menstrual. Pain of a colicky or cramp-like type appears just before or on the first day of the menstruation. The normal menstrual molimin

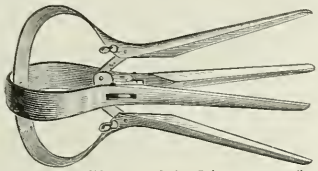

FIG. 1.—A modification of the Schatz metranoikter.

are exaggerated, intense headache, gastrointestinal disturbances, and even vertigo and fainting being present. As the flow is established the pain ceases and the general condition clears up. For the relief of this condition numerous procedures have been recommended. Some operations aim at a cure by a division of the posterior lip of the cervix to provide an enlarged opening at the external os. Few, if any, achieve a similar result at the internal os, where the narrowing is perhaps even more marked, and the end results may include the train of untoward symptoms following a lacerated cervix with erosion and cervical endometritis. The use of long worn pessaries or drains even in selected cases always carries with it the possibility of infection. Simple dilatation of the cervix often gives relief but seldom permanent, the condition recurring after a few months with the same intensity. The rapid dilatation fails to overcome to a sufficient degree the resistance of the cervical tissues.

In order to accomplish a permanent widening of the canal without the necessity of a splitting operation on the cervix or a continuously worn drain, a four bladed modification of the Schatz metranoikter has been devised. (Fig. 1.) The instrument consists of four blades joined in pairs at right angles by springs, the springs being made small enough to be inserted in the nulliparous vagina. The technic of its application is as follows: Following usual preparation, under general anesthesia, with the patient in the lithotomy position the cervix is seized with a double tenaculum and drawn downward. A preliminary dilatation is then performed with the Baer, Warthens, and Cleveland dilators, in succession, the bars of the last being separated to a circumference of eighty mm. The uterine cavity is then lightly curetted with a sharp curette. The handle of the instrument is applied to the knobs on the sides (Fig. 2), the blades approximated, and the instrument inserted obliquely in the vagina. The blades are inserted until the knobs come to rest against the cervix. The handle is then unlocked and removed, allowing the blades to expand. The instrument is removed in twenty-four hours, when it is often found that the cervix is so dilated that a digital exploration of the uterine cavity is possible. In removing the metranoikter the springs are grasped by the fingers and drawn out until the small knobs are in view, when the handle may be applied, the blades approximated, and the instrument withdrawn. Some pain may be experienced by the patient, but it is easily controlled by a small dose of an opiate. As the metranoikter is provided with springs of different degrees of strength, a more powerful instrument may follow the first to obtain the desired dilatation.

In order to ascertain the results from the use of this instrument in the treatment of dysmenorrhea and sterility, the histories of the last 150 consecutive cases admitted prior to 1912 to the clinics of Dr. B. C. Hirst were examined. As a year had elapsed, it was expected that the end results would be definite. It was possible to trace fifty-three of these patients. Twenty-two of the patients had complained only of dysmenorrhea, thirteen of sterility, and eighteen others of both dysmenorrhea and sterility. Of the first group, eight report complete relief, five partial relief, and nine no relief from their previous symptoms. A cure resulted, therefore, in thirty-six per cent. Of the second group, those who complained alone of sterility, ten have become pregnant, nine having full term deliveries. In the third class, of eighteen patients who were admitted for both dysmenorrhea and sterility, the results may be given as regards each condition. Ten report complete relief, two partial, and six no relief from dysmenorrhea. Three of the ten women who have been completely cured of the dysmenorrhea have subsequently borne children. The average length of time before impregnation occurred after the operation in cases of sterility was seven months.

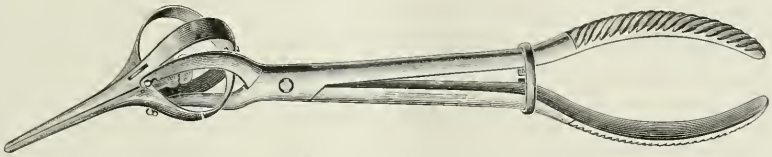

FIG. 2.—Metranoikter with handle attached.

Combining the statistics of the two classes containing cases of dysmenorrhea, it is seen that complete cures resulted in forty-five per cent., while partial relief was obtained in thirty per cent. Of the patients complaining of sterility, the use of the metranoikter was followed by pregnancy in thirteen of the thirty-two cases. In one patient the pregnancy occurred as a tubal gestation. I am indebted to Doctor Hirst for the privilege of using these case histories.

1911 PINE STREET.

Prize Essays.

Questions for discussion in this department are announced at frequent intervals. So for as they have been decided upon, the further questions are as follows:

CXXXIV.—How do you treat muscular rheumatism? (Closed May 15th.)

CXXXV.—How do you treat burns? (Answers due not later than June 16th.)

CXXXVI.—How do you treat cholera infantum. (Answers due not later than July 15th.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short, if practicable no one answer to contain more thon six hundred words; and our friends are urged to write on one side of the paper only.*

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of $25 for the best essay submitted in answer to Question CXXXIII has been awarded to Dr. W. A. Wallace, of Spartanburg, S. C., whose article appears below.

PRIZE QUESTION CXXXIII.

THE TREATMENT OF INFLUENZA, ESPECIALLY IN VIEW OF SEQUELÆ.

By W. A. WALLACE, M. D.,
Spartanburg, S. C.

Influenza is a disease seldom regarded as serious within itself, but is to be much dreaded on account of its sequelæ. It is almost impossible to have a patient realize his danger when told he has a case of influenza, and it is with difficulty that we can get him to follow directions, only so far as to relieve his physical suffering. If we could make him more solicitous about the final outcome of the attack we could considerably reduce our mortality rate from influenza as a causative factor. The treatment, therefore, should be, first, a concentrated effort toward the prevention of sequelæ, and, second, measures to relieve the suffering of the patient. The first cannot be easily carried out, for the patient does not realize the danger of sequelæ, nor does he care much only in so far as his aches, pains, and prostration are relieved.

The first point in the treatment of influenza is a positive diagnosis, and only those cases in which the *Bacillus influenzæ* is known to be present should be diagnosticated influenza. There is, unfortunately, a tendency among physicians, as well as laymen, to draw the line very loosely between a deep cold and *la grippe*, or pseudoinfluenza and influenza; which should not be the case, because it robs influenza of the dread which it should carry with it, and thus favors the development of complications and sequelæ which a little more prudence might prevent. The treatment of influenza must, of necessity, be modified to suit the individual case, especially with reference to previous condition and age of the patient. No one is immune to influenza—the strong and the weak, the aged and the young, even the fetus in utero, are attacked by it. In every case of influenza a careful history should be taken, particularly with reference to any chronic disease which the patient may have, because of the tendency of a chronic condition to become acute after influenza. This is particularly true of tuberculosis, chronic bronchitis, kidney lesions, and chronic gastroenteric diseases. After an attack of influenza the patient should be under observation for at least two weeks, for convalescence is, as a rule, extremely slow, and there is danger of sequelæ till the patient is thoroughly himself again.

As a routine treatment, the following, modified to suit the individual case, has given good results:

First. Isolate the patient and keep him quiet in bed during the acute stage. A pregnant woman should not under any circumstances have the care of, nor should she go in the room where there is a case of influenza, for, should she contract the disease and escape an immediate abortion, the disease may be transmitted to the fetus in utero, with resulting death to the fetus.

Second. The diet should be liquid or light, every two or three hours during the day, and at night when the patient is awake. It is frequently necessary, on account of anorexia, to insist on the patient's taking food; in this class of cases it is well to give strictly liquid nourishment.

Third. Water; 180 c. c. (six ounces) every one and one half or two hours, to keep the kidneys acting freely, which serves a twofold purpose in aiding in elimination and also in preventing irritation along the urinary tract. In the gastroenteric form of influenza, in which vomiting is an obstinate factor, a saline enema, one pint, given twice daily and retained, is used instead of water by mouth.

Fourth. A mercurial purge, followed by castor oil, is to be given at the onset. After this the bowels should be made to act once, or better, twice, by the use of a mild laxative. It is absolutely necessary to keep the bowels acting well.

Fifth. For the aching the following prescription is useful: Quinine sulphate, 2 grammes: phenyl salicylate, 2 grammes; acetphenetidin, 2 grammes; made into twelve capsules and one given every three hours until aching stops; then every four hours. To this, caffeine citrate, in 0.06 gramme doses, may be added if there is much prostration. In those cases in which prostration is more marked than usual strychnine or brandy may be used to sustain the patient. Care should be used not to give strychnine in the nervous form of influenza; nor should alcoholic stimulation be used in the presence of acute or chronic nephritis.

Sixth. The patient should wash the mouth with an alkaline antiseptic before taking nourishment—the N. F. solution gives good results. The same solution, diluted one part to four of boiled water, is used to douche the nose, postnasal space, and throat every four to six hours. This cleansing process is very pleasing to the patient on account of improving the taste, for at least a while. The more important reason, however, is to try to prevent infection from this region into the middle ear or accessory sinuses.

Seventh. Keep the room at an even temperature of 68 to 70° F. and well ventilated—which means, of course, to avoid draughts over the patient.

Of the complications and sequelæ of influenza, pneumonia, either lobar or lobular, is the most common, with bronchitis following close in frequency. These conditions are seen particularly in the respiratory form of influenza, and are so frequent in this form of influenza that it is well to use, from the beginning, some measures to prevent them, if possible. For this purpose the chest is rubbed thoroughly with camphorated oil, or oil of gaultheria, one part, with olive oil, four parts, and covered with an oiled silk jacket. Tinctura benzoini composita, used in an improvised croup kettle, has apparently some beneficial effect on the congested membranes of the respiratory passages. A sedative cough mixture is often required in this class of cases in the early stages, which should be changed to a stimulating mixture as soon as the secretions become established. Tincture of digitalis, every four hours in impending cases of pneumonia, should be given to increase arterial pressure. Should pneumonia become evident, digitalis may or may not be discontinued, as the case demands. The treatment after such development would, of course, be for pneumonia. Otitis media, with resulting mastoiditis, probably comes next in frequency—hence the importance of keeping the mouth, nose, and throat thoroughly cleansed, in the effort to prevent infection from traveling up the Eustachian tube The patient should be cautioned against "blowing the nose hard," and thus forcing infected material into the Eustachian tubes. Pericarditis and endocarditis are possible sequelæ of influenza, and, even though not frequent, should always be borne in mind. An irregular, uneven pulse should not be passed unnoticed, for by the timely direction for the patient to lie on his back and keep perfectly quiet, even under the influence of an opiate if necessary, we may save some from sudden death, and possibly others from an impaired heart. Localized and multiple neuritis are also sequelæ of influenza, resulting from the toxic influence of the *Bacillus influenzæ;* hence the importance of looking after the eliminative organs. Thrombosis of the cerebral sinuses and veins must be borne in mind, and whenever meningitis follows influenza it is possibly the closing scene of thrombosis of a cerebral sinus; the result of infection having traveled up the Eustachian tube to the middle ear, then to the sinus. Therefore the importance of thoroughly cleansing the throat and nasopharynx. Thrombosis of other veins, particularly the femoral, may occur, and this possibility is best met by absolute rest in bed during the acute stage of influenza, and longer, if prostration is very marked. There is a particular tendency for the aged or those already in a debilitated condition to be attacked with phlegmasia alba dolens following influenza, and we should, therefore, be very careful with these patients. Marked and obstinate anemia is a frequent result of influenza, particularly the gastrointestinal form, and is treated by fresh air, liberal, easily digested diet, and some form of iron. This prescription is particularly recommended:

℞ Tincturæ ferri chloridi, ...30 grammes;
Liquoris potassii arsenitis, ...10 grammes;
Glycerini, q. s. ad.....60 grammes.
M. Sig.: Ten drops in water, three times daily after meals.

Dr. P. A. Smithe, of Enid, Okla., remarks:

The severity of any given attack of influenza depends upon two factors, the resistance of the patient and the virulence of the particular strain of the influenza bacillus with which he happens to become infected, in which connection it might be well to mention that it seems as though the clinical severity of the early years of influenza epidemics has been much modified, perhaps through a gradually acquired immunity on the part of our patients, or it may be that the *Bacillus influenzæ* has gradually lost its virulence. Certainly the severe prostrating forms so often seen in earlier years are not so often met with; still there is a prostrating quality to influenza which seems to be a part of the disease, inseparable from it. This being so, one can hardly have a set type or plan of treatment for all cases of "grippe," but must individualize in treatment, as much as in any other acute infection.

It has been my custom to insist on rest in bed, in a light, well ventilated room, apart from the rest of the family, if the house permits. One often finds the patient in a small dark bedroom, about as little suited to careful nursing as a closet, and when I do, I tell the patient or his family that grippe itself is not often dangerous, but that like scarlet fever it often "settles" in the ears or head, and that to prevent these troubles we must have the best room for the patient, so we can care for him properly. He should have a daily warm sponge bath, which will be all the more refreshing if a heaping tablespoonful of baking soda is added to the water.

I begin the medical treatment with a calomel purge, followed by a saline—¼ grain calomel, with soda, repeated every half hour until ten doses are taken; followed by Epsom or Rochelle salt, one ounce. As a rule, the calomel does not have to be repeated, but if gastric irritation is prominent throughout, I give, every other day, a course of 1/10 grain calomel tablets, repeated until ten are taken, and followed by a saline, as before. At the same time, the pain almost always needs relief. As a rule, an opiate is unnecessary, but in the worst cases ¼ grain morphine, or from ⅛ to ⅙ grain heroin, by hypodermic injection, will be needed to quiet pain and nervous shock. However, I usually depend on aspirin in ten grain doses every two to four hours, followed by plenty of water. As a rule, I combine with each powder, for the first twenty-four hours, from 2½ to three grains of acetphenetidin, and ⅓ grain citrated caffeine, discontinuing the combination and replacing it with aspirin alone as the initial pain becomes less severe. I have found that, as a rule, the aspirin gives rise to less gastric irritation than other salicylates. If there is much vomiting, I give 1/10 grain powders of calomel, without soda or sugar of milk, dry on the tongue, every fifteen minutes, and direct patient to allow the small powder to dissolve in the saliva and then swallow the saliva. Also, a mustard plaster about three inches square over the epigastrium is effective. I usually give hexamethylenamine, from ten to fifteen grains, dissolved in a full glass of water, four times daily, to promote so far as may be, aseptic secretions, and also direct that the nasal mucosa and throat be sprayed four or five times daily with a solution made up of a Seiler's tablet

dissolved in six ounces of water. Care in the use of the spray should be advised, lest infectious material should be driven back through the Eustachian tubes or into the accessory nasal sinuses. If this occurs, infection is pretty sure to follow, sometimes with permanent damage to the conducting mechanism in the middle ear, or mastoiditis. At any sign of such complications the services of a competent nose and throat specialist should be had, if obtainable. The *Bacillus influenzæ* seems to be especially apt to gain a foothold in the middle ear or the mastoid cells, and is a fruitful cause of permanent damage in those two situations.

I find that for the first day or two, until the initial symptoms of the attack pass, patients do better without food, or with a little lemon albumen or other slightly nourishing drink. As soon as the fever has lowered and the pain is less severe, and the gastric symptoms have subsided, however, the diet should be as nourishing as possible, while at the same time it should be easily digested. Eggnog, milk, buttermilk, tea and toast, soft eggs, seem to be the best.

The cough and pulmonary pain usually abate with the generalized pain, after twenty-four hours, or codeine may be needed to quiet the patient, especially at night. If a bronchitis is present I use counter irritation by mustard paste, over front and back of chest. I direct that the patient shall guard himself against exposure for at least two weeks after the acute symptoms have passed, and unless the circumstances are very urgent, forbid him to resume his employment for a similar length of time, as a relapse seems to predispose to bronchitis or pneumonia, and often seems to be the start of pulmonary tuberculosis. The convalescence from grippe is the most dangerous time, and the patient's resistance should be kept as high as possible by nourishing diet, sunshine, slowly increasing light exercise in the open air, and sleeping in a well ventilated room; and during this time the use of the antiseptic nasal spray should be kept up.

Dr. Nelson DuVal Brecht, of Washington, D. C., writes:

The therapy of influenza may be considered for convenience under the following headings: 1. Hygienic; 2, dietetic; 3, drug; 4, onset; 5, course; 6, sequelæ and convalescence; and, 7, contraindications.

Hygienic measures.—The hygienic measures to be enforced in the treatment of a case of influenza are isolation of the patient in a well ventilated room, which receives a maximum degree of sunshine and is maintained at an equable temperature of 70° F. (20° C.), continuous and absolute rest in bed, and disinfection of the patient's discharges and secretions and all fomites that have been in the sick room.

Dietetic treatment.—The dietetic treatment resolves itself into the employment of an easily digested, nourishing, liquid or light dietary (slops) with a liberal allowance of pure cool (but not iced) drinking water.

Onset or invasion.—When a patient is seen during the first few hours of an attack it is well to administer a good purge, as calomel, six one grain[1] (0.06 gm.) tablets, one every hour, followed by a Seidlitz powder on the ensuing morning. Other useful cathartics, when idiosyncrasies to calomel exists, are castor oil, magnesium sulphate, and magnesium citrate. Vaccines or phylacogens manufactured from Pfeiffer's bacillus should be injected hypodermically at the onset as a routine procedure in the hope of aborting or shortening the attack. If the disease persists, their use should be continued. Immediately after the purgation, the following prescription is of value to stimulate the emunctories and reduce the temperature:

℞ Tincturæ aconiti, ...5 c. c.;
Spiritus ætheris nitrosi, } .....āā 50 c. c.;
Syrupi limonis, ... }
Liquoris ammonii acetatis, q. s. ad.....200 c. c.
M. Sig.: One dessertspoonful in a wineglass of water as required.

An equally efficacious mixture is:

℞ Potassii citratis, ... 25 grammes;
Spiritus ætheris nitrosi, ...100 grammes;
Aquæ distillatæ, q. s. ad.....200 grammes.
M. Sig.: One dessertspoonful in one half tumblerful of water three times a day.

A hot bath and a drink of hot lemonade are of distinct value in the first stage, just before the patient goes to bed.

Course.—After the disease has passed the incipient stage, it is my custom to prescribe the following combination, unless there is some specific contraindication.

℞ Codeinæ sulphatis, ...0.20 grammes;
Acetphenetidinis, ... }
Cinchonidiæ salicylatis, } .....āā 3.00 grammes
Divide in capsules No. XX.
M. Sig.: One to be taken every three hours.

The pratical value of this prescription is that it relieves pain, coryza, and cough, is antipyretic and diaphoretic, while the cinchondria and codeine have sufficient strength as vasomotor stimulants to overcome any untoward depressive action of the coal tar product. Many practitioners employ a combination of phenyl salicylate and acetphenetidin to reduce the pyrexia and make the patient more comfortable. The phenylsalicylate by reason of its phenol content has a happy effect as a gastric sedative and, in addition, exerts an inhibitory action upon the intestinal and vesical flora. During the last few years aspirin has also come into extensive use. As *la grippe* is *per se* an asthenic disease, cardiac stimulation is nearly always indicated. Of the cardiac stimulants, strychnine is our sheet anchor and should be given to adults in doses of 1/20 grain (0.003 gramme) three or four times daily, when the pulse fags, the integument becomes bathed in perspiration, the cardiac or Hippocratic facies develops, or other symptoms of adynamia arise. When hyperpyrexia occurs the Brandt treatment may be employed with advantage in conjunction with frictions designed to bring the heated blood to the body surface and prevent internal congestion. The coal tar antipyretics in small doses or the preparations of cinchona, and the use of ice cap or cold water coil are also useful. To allay cough the inhalation of steam impregnated with compound tincture of benzoin is the most valuable remedy of our armamentarium. Belladonna, cubebs, ammonium chloride, morphine, codeine, and the bromides are important adjuncts. Insomnia and de-

[1] It will be observed that the dose is large, as is customary in the South.

lirium are not of sufficient importance to warrant special therapeutic measures.

Sequelæ and convalescence.—The important sequelæ of influenza are bronchitis, pneumonia (lobular or lobar), neurasthenia, nephritis, iritis, conjunctivitis, optic neuritis, otitis, abscess of the lung, pleurisy, empyema, neuritis, cardiac disease, various psychoses of the depressive or melancholic type, and impotence in males. The prophylaxis of the sequelæ consists in the judicious and careful management of the case, including the best supportive measures, nursing, confinement to bed, and rational medication. During convalescence it is essential that the patient have a change of air, pleasant surroundings, tonics, hematinics, and nutrients. Alcohol in the form of milk punches and eggnog, beef extracts, and ichthyol in the form of capsules for internal administration are to be recommended. Ichthyol is of special benefit in those cases in which the stomach has been deranged and there has been loss of weight. During convalescence the bowels should be regulated by the use of cascara sagrada.

Contraindications.—Coal tar products should not be employed in large doses; neither should depleting measures, such as venesection, wet cupping, or leeching. Influenza is an exhausting malady. It is well to remember the relative strengths of the three most used coal tar products, which are as follows: Strongest, and most depressing to the heart and respiration, acetanilide; next, antipyrine; least depressing, acetphenetidin. Digitalis is useless as a cardiac or circulatory stimulant in this disease. It does not take hold and act upon the circulatory apparatus when there is fever. The use of strychnine in large dosage should not be continued for an excessive period of time. Its use results in overstimulation, followed by depression or paralysis of the nervous system, including the cardiac ganglia, and delirium. Alcohol is of no value during the active period of the disease. The use of the combination of brown mixture and antimony so much in vogue in former years is to be condemned. In many cases of *la grippe,* particularly those in which there is marked involvement of the lungs or kidneys, there is a tendency for the development of pulmonary edema. Antimony greatly increases the liability to this unfortunate complication and frequently causes the death of patients by drowning in their own secretion, so to speak. In the therapeutics of influenza the empirical use of drugs is to be tabooed. When in doubt, masterly inactivity is the rule of conduct to be pursued.

(To be concluded.)

Therapeutic Notes.

Treatment of Gastric Hyperesthesia.—A. Bassler, in the *American Journal of Gastroenterology* for January, 1913, points out that sometimes patients with gastric hyperesthesia suffer from gastric subacidity during digestion, and that, paradoxical as it may seem, these do best when given alkalies. The great majority of patients, however, show increased acidity. In these the bromides are most useful to control distress; not infrequently they must be employed in large doses for a short time, perhaps even for one or two months. The following formulæ are suitable:

I.

℞ Sodii bromidi, ...ʒiiss-vi (10 to 25 grammes);
Aquæ menthæ piperitæ, ...℥viii (250 grammes).
Fiat solutio.
Sig.: One tablespoonful in water after meals.

II.

℞ Sodii bromidi, ... } .....āā ʒiiss (10 grammes);
Tincturæ valerianæ, }
Aquæ chloroformi, ...℥iii (100 grammes).
M. ft. solutio.
Sig.: One teaspoonful in water after meals.

III.

Where there is constipation:

℞ Tincturæ rhei, ... } .....āā ʒiiss (10 c. c.).
Tincturæ valerianæ, }
M. Sig.: Twenty drops in water after meals.

High caloric feeding and the administration of iron are always advisable in patients who are undernourished or anemic. As supplementary measures, hygiene and hydrotherapy, including the application of cold compresses to the abdomen to relieve distress; the galvanic current; occasionally nux vomica in medium doses, and the procedures customarily availed of in hyperchlorhydria and overmotility are indicated.

Treatment of Vincent's Angina.—T. H. Halsted, in the *Lancet Clinic* for October 26, 1912, states that in his experience the best results were obtained by the use of trichloracetic acid in the mild cases of Vincent's angina. He begins by removing the membrane with hydrogen peroxide solution and wiping off with a cotton swab. A ten per cent. solution of cocaine hydrochloride is then used to anesthetize the ulcer, and a few minutes later the trichloracetic acid applied. Three or four applications, at intervals of two or three days, are sufficient; in fact, sometimes but one is required.

Tincture of iodine is preferable to the acid in the presence of extensive ulceration, although in the author's cases, which were not of this type, it did not prove as effective.

An important feature in the treatment is that the general condition of the patient must be improved. The teeth must, in particular, be cared for, as no progress can be expected while caries and the accompanying ulcerations are allowed to remain.

Treatment of Trifacial Neuralgia.—A. Réthi is stated, in *Semaine médicale* for March 12, 1913, to have obtained excellent results in three obstinate cases of trifacial neuralgia by electrolysis of the infraorbital or supraorbital nerve. The needle employed, of the thickness of a sewing needle, was covered to within three quarters to one centimetre of its extremity with a thin layer of insulating material, in order to preserve the skin and deeper healthy tissues from injury. One half hour before the electrolysis a subcutaneous injection of 0.01 gramme (1/6 grain) of morphine hydrochloride was given, and fifteen minutes later the skin was asepticized and a deep injection of morphine into the nerve canal made in order to insure anesthesia of the nerve. At the expiration of the half hour

the electrolytic needle, constituting the negative pole, was introduced into the canal, the other electrode, suitably moistened, being applied to the side of the face. A current was then passed, gradually increased to twenty, twenty-five, and thirty milliampères, for a period of fifteen minutes, after which the strength of the current was reduced. The procedure was well borne, and the skin remained quite intact, except for a slight evanescent swelling on the day following.

In the first case the author reports, that of a woman believed to be suffering from antral suppuration and presenting a rebellious infraorbital neuralgia which perineural injection of alcohol had failed to influence, the area of distribution of the nerve treated by electrolysis became quite anesthetic and pain disappeared. The two other cases so far treated, both suffering from supraorbital neuralgia of several years' standing, were likewise wholly relieved by the electrolysis.

Treatment of Acne in Children.—Gaucher, in *Monde médical* for November 25, 1912, reminds us that the first measure in the treatment of acne should be to seek, and if present, exclude, any drugs or local applications that might be causing the disturbance. Next the stomach should be cared for, and such articles of diet as stews, preserved meats, sauces, fish and shellfish, fermented substances in general, sweetbread, cabbage, asparagus, sorrel, and strawberries, prohibited. Constipation should be overcome, and hydrochloric acid given at mealtime.

Locally, careful washing with soap and water every evening is required. This is to be followed by application of the following lotion, which is allowed to act during the night:

℞ Sulphuris præcipitati, ...ʒi-iss (4 to 6 grammes);
Talci purificati pulveris, ...ʒss (2 grammes);
Glycerini, ...ʒii (60 grammes);
Tincturæ quillajæ, ...ʒiiss (10 grammes);
Aquæ rosæ, ...℥iv (120 grammes).
M. Sig.: Shake before using.

Each morning, the area should again be washed with soap and water and a paste of zinc or bismuth then applied. Where no irritation of the skin appears, the following powder, suitable especially for female patients, may be applied:

℞ Magnesii carbonatis, ...ʒiss (50 grammes);
Sulphuris præcipitati, ...gr. xv (1 gramme);
Tincturæ carmini, ...q. s.
M. ft. pulvis.

Other agents which may be used are resorcinol, employed in one per cent. solution as a spray or as a two or three per cent. ointment if the area involved is small, and mercury bichloride, employed in one in 1,000 solution as a wash. The mercury salt and sulphur should never be used simultaneously.

The pustules should be punctured but not completely emptied until mature. Comedones, however, should be evacuated. The area should be carefully cleansed with hot water and the following lotion applied:

℞ Aetheris, ...ʒivss (12 grammes);
Sodii boratis, ...ʒss (15 grammes);
Aquæ, ...℥viiiss (250 grammes).
M. ft. solutio.

Miliary granulations should, if possible, be enucleated.

Mixture of Alcohol and Glycerin as a Wet Dressing.—F. Dörken is said, in *Semaine médicale* for October 23, 1912, to have obtained good results with the use of a mixture in equal parts of alcohol and glycerin as a moist dressing in cases where the ordinary dressings induce skin irritation—especially in children of the "exudative diathesis." The irritant properties of the alcohol are practically annulled by the glycerin, its local curative effects, however, remaining unimpaired. The dressing is applied in the usual manner, viz., gauze is saturated with the mixture, folded several times, carefully expressed, placed over the skin surface, and covered with some impermeable material and a layer of cotton wool.

This measure was employed with marked success in cases of lymphadenitis, mastitis, suppurative processes in general, inflammation in the umbilical region in the newborn, etc. In bronchopneumonia the mixture was rubbed on the skin for purposes of counterirritation. In children with sensitive skins it may also with advantage be employed for dressings around the neck in the presence of sore throat.

Improved Formula for Mistura Rhei et Sodæ.—A. F. Marquier, in the *American Journal of Pharmacy* for February, 1913, is credited with the statement that the official rhubarb and soda mixture contains an excess of glycerin and is too strongly flavored. He suggests the following formula as a substitute for that of the *Pharmacopœia of the United States:*

℞ Fluidextracti rhei, ...♏xxiv (1.5 c. c.);
Fluidextracti ipecacuanhæ, ...♏v (0.3 c. c.);
Sodii bicarbonatis, ...gr. lvi (3.5 grammes);
Potassii carbonatis, ...gr. v (0.3 gramme);
Spiritus menthæ piperitæ.....♏xxiv (1.5 c. c.);
Alcoholis, ...ʒiiss (10 c. c.);
Glycerini, ...ʒvi (25 c. c.);
Aquæ, q. s. ad.....ʒiiiss (100 c. c.).
Misce et filtra.

Treatment of Pellagra.—E. A. Bowling, in the *Charlotte Medical Journal* for December, 1912, states that while Nason has obtained good results with the use of thymol in heroic doses in this affection, and Beverly Tucker has found hexamethylenamine more useful than any other drug, in his own experience nothing will benefit the patients so much as chlorine water, given in teaspoonful doses every two hours. The water should always be freshly made, with a slight excess of hydrochloric acid. The author usually instructs the druggist to take forty grains (2.6 grammes) of potassium chlorate, add four drachms (sixteen c. c.) of hydrochloric acid, and when gas is given off freely to pour in enough water to make eight ounces (250 c. c.).

Of eighty patients in whom the solution was used, but very few who employed it long enough were not benefited. Among the forty-two patients last seen there were but six deaths, two of which were in old, chronic cases, and two in cases hopeless from the start. The *modus operandi* of the chlorine water is believed by the author to be as an antiseptic in the digestive tract, the disease being looked upon as of microorganismal origin. Castor oil is given in addition in daily doses of one tablespoonful.

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FRIEDMANN'S TUBERCULOSIS SERUM AND THE NEW YORK BOARD OF HEALTH.

When, in our issue of May 17th, we referred to the many deaths which had followed the earlier use of Koch's original tuberculin (O. T.), owing to a deficient knowledge of its action and to its indiscriminate use, we little thought that hardly a week would elapse before harmful effects would also be credited to Friedmann's widely advertised serum. Nor did we anticipate that in two weeks the Board of Health, laying stress on a danger we had emphasized in our allusion to the "ever disquieting drawback of containing living tubercle bacilli" possessed by the Friedmann serum, would pass an amendment to the Sanitary Code, prohibiting "the use of living cultures of bacteria in the inoculation of human beings for the prevention or the treatment of disease in New York city" until permission be granted by the board for its use. The conditions for this permission are such as thoroughly to protect the public, viz.: "Full and complete data regarding the method of use, including a specimen of the culture and other agents employed therewith, and a full account of the details of preparation, dose, and administration." A violation of the amendment will be punished by a fine of $500 or imprisonment for one year or both.

The events which led up to the adoption of this precautionary measure were initiated by a letter to the Board of Health from Dr. J. J. O'Connell, health officer of the port of New York. This official urged that although ample time and opportunity had been extended to Doctor Friedmann to demonstrate the value of his serum, such a demonstration had not only not been made, but that reports of the gravest character, emanating from the official investigator's bureau, had been received. These were that the patients subjected to the treatment had not improved, that they had lost ground to a greater extent than might have been expected from the natural ravages of the disease, and that an unnaturally rapid development of the tuberculous process on the previously healthy side—which healthy side, as is well known, often greatly prolongs the life of the patient—had followed the use of the serum. Briefly, the alleged cure was stated to have shown a tendency to accelerate rather than retard the progress of the disease. A conference, presided over by Dr. Hermann M. Biggs, chief medical officer of the Health Department, and attended by authoritative members of the profession, then brought out additional evidence incriminating the Friedmann serum to the extent, it was stated, of its having caused death in several instances. Then followed the meeting of the Board of Health which unanimously passed the resolution, framed by Commissioner Lederle, referred to above. As a result the Friedmann Institute of New York will have to close its doors and the serum remain within the precincts of the experimental laboratory until its sponsors can satisfactorily meet the demands of modern science.

It has been hinted that professional prejudice and jealousy had inspired the antagonism to Friedmann's serum. The resolution of the Board of Health properly meets this calumny by the statement that the alleged cure had been rendered unsatisfactory, unscientific, and practically futile through the insistence of the originator of the alleged remedy on conditions which involved inadequate observation and inaccurate methods of administration, and his insistence on secrecy regarding the substances employed. Serious investigators, foreign or native, who have followed the only straight path, have never found the American profession wanting in favor and support. All others are warned, moreover, through the Friedmann incident, that the United States can no longer be looked upon as a dumping ground for undeveloped

"cures," particularly when, as was made so evident in the present instance, the purpose is to reap a harvest among those unfortunates who grasp at any straw in the hope that it will prove their salvation.

States in which adequate protection against such abuses does not exist should follow the example set by New York. In Pennsylvania the authority of the health commissioner is such, under the act which created the department, that Doctor Dixon can and, we learn, will impose upon Friedmann conditions practically similar to those which fortunately now prevail in New York city.

HOME VISITATION—AN INDISPENSABLE METHOD OF PUBLIC HEALTH CONTROL.

One of the most interesting developments of modern public health work is the emphasis placed on individualizing the supervision of each case through home visitation. Originally developed by the health department of New York city in the campaign against tuberculosis, similar methods were first employed in general hospital and dispensary work, if we remember rightly, by Cabot, of Boston. They proved remarkably successful, and have since been copied in other cities, so that now they constitute a recognized function of hospital and dispensary administration. Home visitation undoubtedly supplies the surest way to reach the indifferent and ignorant portion of the public, and everyone familiar with public health administration knows that this constitutes the great obstacle in the successful prevention of disease. These people cannot be reached through public lectures, or through printed circulars of information, or yet through exhibitions; such methods are all far too indirect, too impersonal. But visit the people in their homes, show them that your interest is personal, help them with their individual problems, teach them the wherefore—and the solution of many a difficult health public problem lies close to hand. This has been well shown by the success attending the work carried on against tuberculosis, and by the splendid results obtained in New York in recent years through the campaign against infant mortality.

Similar methods might well be employed against venereal diseases, than which there is no greater menace to the public health. And since, as already stated, the object of home visitation is to appeal directly to the patient concerned and overcome his indifference and ignorance, it would seem advisable to confine this work, as in tuberculosis, to persons treated in free dispensaries and hospitals. Physicians, and not nurses, should be employed to make these visits, and particular emphasis be laid on instruction as to the necessity for proper and adequate medical treatment, and as to the spread of infection. It is clear that this affords a definite field of activity for the public health authorities, and one constituting a useful and necessary adjunct to the work of private physicians, hospitals, and dispensaries. The medical profession has strongly objected to the health authorities undertaking the *treatment* of the venereal diseases by means of dispensaries, but the plan here outlined admirably supplements, and in no way conflicts with the work of existing agencies. It is evident, from what has been said, that the only effective means of reaching a very large part of the population will be closed to the public health administrator if home visitation is interfered with, and it is equally clear that there can be no home visitation without notification to and registration of the cases by the health authorities. It may be that the name "clinic" or "dispensary," which is proposed by the health department for its diagnostic stations, is objectionable to the practising physician, but it is clear that the department has no intention of interfering with the practice of the physician; on the contrary, patients will be advised, if the case has been diagnosticated as syphilis, to consult a physician and to follow his advice, and as the visiting physicians employed by the health department are not permitted to solicit such patients, these patients will go back to their own physicians. Besides, the objections raised against reporting institutional cases to the health authorities are not in reality tenable, for at the present time much more than the data required for registration is entered in the hospital histories, and these, as is well known, are accessible to nurses, orderlies, clerks, and even to other employees of the hospital.

A NEW METHOD IN DIPHTHERIA PROPHYLAXIS.

In our issue of April 26th reference was made to von Behring's new procedure having for its purpose the establishment of a prolonged, active immunity to diphtheria. The additional details now available only serve to confirm the importance of his discovery. The method consists in injecting a combination of diphtheria toxine and antitoxine so proportioned that upon administration to guinea-pigs the antitoxine almost or quite offsets the poisonous action of the toxine. It was found that in human beings such a mixture, though bringing about immunity, caused only a slight reaction, pro-

vided the system had not already become oversensitive to diphtheria bacilli. Children from four to fifteen years old are almost always more sensitive than the newborn. Thus, with a dose which in a newborn infant would cause practically no reaction, it was found that in an older child the same amount (1/16 c. c.) caused an intense febrile reaction, with the active production of antitoxine by the body to the extent of 600,000 units. Since this is far in excess of the intensity of immunity required for practical purposes, there is ample opportunity for producing a sufficient degree of protection without inducing a marked reaction. In the child just referred to it was calculated, from several observations of the antitoxic power of the blood, that it would take over two years before this power would diminish to a level which is attained with the ordinary passive immunization by diphtheria antitoxine in ten days. Another important practical result is that in patients sensitive to horse serum a passive immunity can be produced by injecting human antitoxic serum, such as that obtained in the child mentioned above; furthermore, this immunity will not rapidly disappear, as would be the case with horse serum, but will persist as long as the active immunity obtained with the toxine antitoxine mixture, owing to the fact that the material introduced is derived from an individual of the same species.

A provisional outline of the procedure which von Behring demands should be followed in further trying out the prophylactic remedy is given in *Semaine médicale* for May 7, 1913. The mixture used must be free of aerobic and anaerobic germs, and must be nontoxic in guineapigs in the dose of 0.0005 gramme for every 100 grammes of body weight. Infants are to be given 0.0001 gramme as the initial dose, and older children only 0.00005 gramme, injected under the skin in 0.001 gramme of fluid. The further details of the procedure prescribed would occupy too much space. Suffice it to say that von Behring will at present entrust his remedy only to those who are able and agree to follow his directions accurately. The classes of subjects to be inoculated are those exposed to diphtheria in hospitals, schools, and buildings occupied by several tenants; well persons, not exposed to diphtheria at the time, in orphan and insane asylums, prisons, etc., and diphtheria carriers—the latter being usually very sensitive to the remedy and in whom a high degree of immunity developed. In beginning cases of diphtheria and in persons with a weak heart and irregular pulse the mixed inoculations are not at present to be tried.

The significance of von Behring's new discovery is obvious. Not the least of its practical results, it would seem, will be the elimination of the bugbear of horse serum anaphylaxis in connection with the preventive administration of antitoxines, to say nothing of the possible removal of the danger attending diphtheria carriers. In April the safety of the toxine antitoxine mixture had already been proved in about eighty cases this year, and its efficiency in producing active immunity was illustrated by recent experiences in Hagemann's ward in Marburg, where none of the children treated were attacked with diphtheria or harbored the bacilli, in spite of the fact that "carriers" were constantly present and an epidemic of the disease actually took place in the ward.

AUTOPSIES IN THE UNITED STATES.

We all knew that we were much behind the leading European countries in the matter of necropsies, but we never knew exactly the extent of our backwardness. The report of the Public Health, Hospital, and Budget Committee of the New York Academy of Medicine on Post Mortem Examinations in the United States, just made public, contains figures which should give us cause for thought. Bellevue Hospital, with its average of 3,000 deaths annually, has an average of 300 autopsies a year. The Boston City Hospital had 100 autopsies for the 1,611 cases which terminated fatally in that hospital in 1912, and the Philadelphia General Hospital held 196 post mortem examinations on the 1,749 dead in 1912. Some of the smaller institutions fare, relatively, a little better, but the proportion of our hospital cases which come to autopsy is ludicrously small in comparison with foreign hospitals, and our figures show a disquieting tendency to decrease. While the Montreal General Hospital shows a proportion of eighty-six per cent., University College Hospital, of London, eighty-four, Charité Hospital, of Berlin, ninety-two, and the Allgemeine Krankenhaus, of Vienna, ninety-nine, the proportion of cases which come to autopsy in our largest hospitals is about ten per cent. In some instances it falls as low as six and five per cent. How under such circumstances can we expect to advance medicine and to teach physicians is a question that very vitally concerns not only the profession but the general public (if not primarily) as well. The public wants good and reliable physicians, but is unwilling to provide for their education, or, rather, is ignorant of the real needs of proper medical education. And we are

to be blamed for their ignorance; we have not taken the trouble of educating them. Of the five causes responsible for the small number of autopsies in this country mentioned in the report of the Public Health, Hospital, and Budget Committee, adverse public opinion and existing prejudices are the most important. These can be overcome, partially at least, by a process of education and appeal to the common sense of the people. A great many people do not know the difference between an autopsy and an anatomical dissection. They object to an autopsy because they think that it entails a complete taking apart and disfigurement of the body. Neither do our laws differentiate between an autopsy and a dissection, and this is responsible for a great deal of confusion and many difficulties. A modern law should clearly recognize this difference and should also relieve the hospitals from the irksome duty of obtaining permissions for autopsies. It should be left to the friends and relatives of the deceased to object to an autopsy, if they so desire; but in case there be no objection within, say, twenty-four hours after notification of death, the body should automatically come to an autopsy. Under such arrangements, practised everywhere on the Continent and in England, there will be no injustice done to anybody and a great gain will be secured to medical science and education.

PROTECTION FROM THE ROENTGEN RAYS.

The numerous instances of severe dermatitis that have arisen among roentgenologists, with the further deplorable consequences of epithelioma and even death, lend interest and significance to all new methods of prophylaxis in this direction. The gloves covered with lead and rubber heretofore used by x ray specialists have been faulty in that they lacked flexibility and protected only the dorsal surfaces of the hands, the palms and lateral edges remaining exposed to the rays in the course of the necessary manipulations. Recently Bettremieux (*Presse médicale*, April 19, 1913) is stated to have had prepared for his personal use gloves made from silk strands charged with three times their weight of lead phosphostannate. The silk thus treated was woven into a cloth with meshes sufficiently large to afford a convenient degree of flexibility, but small enough to exclude the radiations. The gloves made from this material proved completely opaque when placed in the path of the rays, as illustrated in a photograph which Bettremieux took. That they constitute a distinct advance in x ray prophylaxis seems to admit of no doubt, since the radiographer will no longer be tempted to discard his gloves because of their annoying thickness and stiffness. The silk material may also be used for the making of other kinds of protective paraphernalia.

News Items.

Changes of Address.—Dr. E. P. Livingston, to 808 St. Nicholas Avenue, New York.

Dr. J. Wallace Beveridge, to 7 East Thirty-eighth Street, New York.

Meetings of Philadelphia Medical Societies to be Held during the Coming Week.—Tuesday, June 10th, Pediatric Society; Thursday, June 12th, Pathological Society; Friday, June 13th, Northern Medical Association.

Dedication of Beth David Hospital.—The new building of the Beth David Hospital, 113th Street and Lexington Avenue, New York, was formally opened on June 1st, the principal speaker being Dr. Abraham Jacobi.

New Building for Flower Hospital.—The cornerstone of the first of the four new buildings, which are to be erected at a cost of $1,000,000 for the joint use of the Homeopathic Medical College and Flower Hospital, was laid on Thursday afternoon, May 29th. This building will be used exclusively by private patients.

New Orthopedic Hospital.—The New York Orthopedic Hospital and Dispensary has purchased property in East Fifty-eighth and Fifty-ninth Streets, to be used as a site for new buildings for the hospital. The plans have not yet been completed, but it is understood that a large building will be erected as soon as possible.

New Officers of the Illinois State Medical Society.—At the sixty-third annual meeting of this society, held in Peoria on May 20th, 21st, and 22d, the following officers were elected: President, Dr. A. L. Britton, of Athens; first vice-president Dr. Sumner Miller, of Peoria; second vice-president, Dr. D. G. Smith, of Elizabeth; secretary, Dr. W. H. Gilmore, of Mount Vernon; treasurer, Dr. J. A. Markley, of Belvidere, reelected. Next year's meeting will be held in Decatur.

Annual Meeting of the Oklahoma Medical Association.—Over three hundred delegates attended the annual meeting of the Oklahoma Medical Association, held in Enid recently. The following officers were elected: President, Dr. J. M. Byrum, of Shawnee; vice-presidents, Dr. D. Long, of Duncan, Dr. J. T. Slover, of Sulphur, and Dr. J. H. Barnes, of Enid; secretary and treasurer, Dr. Claude Thompson, of Muskogee, reelected. Guthrie was selected as the next place of meeting.

American Association of Anesthetists.—This association, which was organized on June 12, 1912, at Atlantic City, N. J., will hold its first regular meeting at Minneapolis, on June 18, 1913. Scientific sessions will be held in the morning and afternoon, ten papers being listed on the programme, and in the evening there will be a banquet at the Hotel Leamington, at which it is expected Dr. John A. Witherspoon, of Nashville, president-elect of the American Medical Association, will be present. On Thursday, June 19th, at the afternoon session of the Section in Surgery of the American Medical Association, a symposium on anesthesia will be presented under the auspices of the American Association of Anesthetists. The officers of the society are: President, Dr. J. Tayloe Gwathmey, of New York; vice-presidents, Dr. Charles K. Teter, of Cleveland, Dr. F. H. McMechan, of Cincinnati, and Dr. Yandel Henderson of New Haven; treasurer, Dr. Harold A. Sanders, of Brooklyn; secretary, Dr. William C. Woolsey, of Brooklyn.

Personal.—Dr. Paul G. Woolley has tendered his resignation as dean of the Medical Department of the University of Cincinnati, to take effect on July 1st, in order to devote more time to pathological research work He will retain the chair of pathology in the university.

Dr. William Brady, of Elmira, has been appointed physician to Auburn prison, to succeed Dr. John Gerin, who resigned recently.

The degree of Doctor of Science was conferred upon Colonel William C. Gorgas, assistant surgeon general, Medical Corps of the United States Army, and Dr. Alexis Carrel, of the Rockefeller Institute of Medical Research, by Columbia University, at the 159th annual commencement, held on June 4th.

Dr. Smith Ely Jelliffe, of New York, delivered the address to the graduating class of the Training School for Nurses of the Government Hospital for the Insane, Washington, D. C., and Dr. William A. White, superintendent of the institution, presented the diplomas.

Connecticut Medical Association.—The annual meeting of this association was held in Hartford on Wednesday and Thursday, May 21st and 22d, under the presidency of Dr. Edward T. Bradstreet, of Meriden. Officers for the ensuing year were elected as follows: Dr. D. C. Brown, of Danbury, president; Dr. W. S. Hulbert, of Winsted, first vice-president; Dr. Kate C. Mead, of Middletown, second vice-president; Dr. M. M. Scarborough, of New Haven, secretary; Dr. J. H. Townsend, of New Haven, treasurer; Dr. Edward J. McKnight, of Hartford, delegate to the meeting of the American Medical Association in Minneapolis. The meeting was brought to a close by a banquet at the Hartford Club on Thursday evening. Nearly one hundred and twenty-five persons attended, the guest of honor being Dr. George R. Deacon, of Stratford, Ontario.

Commencement Exercises at the Army Medical School.—The closing exercises of the Army Medical School, session of 1912-1913, were held at the school on Saturday morning, May 31st. The address was delivered by Dr. Charles W. Richardson, first lieutenant, Medical Reserve Corps, and the diplomas were presented by Secretary of War Lindley M. Garrison. The Sternberg medal was presented by Brigadier General George M. Sternberg, United States Army, retired, to First Lieutenant George R. Callender, of Massachusetts, one of the honor graduates, and Colonel John Van R. Hoff, United States Army, retired, presented the Hoff medal to First Lieutenant Benjamin B. Warriner, of Virginia, also an honor graduate. The other honor graduates were First Lieutenant George F. Lull, of Pennsylvania, and First Lieutenant Sidney L. Chappell, of the District of Columbia.

The American Medical Association.—The sixty-fourth annual meeting of this association will be held in Minneapolis, June 17th to 20th. The House of Delegates will convene at 10 o'clock on Monday, June 16th, but the general meeting, which constitutes the opening exercises of the scientific session, will be held on Tuesday, June 17th, at 10:30 a. m. The fifteen sections of the association will meet on Tuesday at 2 p. m., and subsequently, according to their programmes, on the three following days. The registration office will be open from 8:30 a. m. to 5:30 p. m. on every day but Friday, June 20th, when it will be open from 9 to 10 a. m. only. The first general meeting will be held in the Minneapolis Auditorium, and many of the section meetings will be held in the new buildings of the medical school of the University of Minnesota. Official programmes will, as usual, be given to each member on registration, but will not be distributed in advance of the meeting. Dr. Abraham Jacobi, of New York, is president of the association, Dr. John A. Witherspoon, of Nashville, president-elect, and Dr. Alexander R. Craig, of Chicago, secretary.

Canadian Medical Association.—A provisional programme has been issued of the forty-sixth annual meeting of the Canadian Medical Association, which will be held in London, Ontario, on Tuesday, Wednesday, Thursday, and Friday, June 24th, 25th, 26th, and 27th under the presidency of Dr. H. A. McCallum, of London. The first general meeting will be held on the evening of June 24th, the morning and afternoon being devoted to the transaction of business, and at this meeting the address in surgery will be given by Dr. J. Alexander Hutchinson, of Montreal, and the address in gynecology, by Dr. T. S. Cullen, of Baltimore. At the second general meeting, to be held on Wednesday evening, Dr. H. A. McCallum will deliver the annual address of the president, and the address in medicine will be delivered by Dr. Llewllys F. Barker, of Baltimore. The morning session of the third day will be devoted to a symposium on diseases of the stomach, and a symposium on diseases of the thyroid will be presented at the afternoon session. In the evening a public lecture on National Health will be given by Dr. Helen MacMurchy, of Toronto. On Friday morning Dr. Frank Billings, of Chicago, will conduct a medical clinic before the association, and a paper on the Experimental and Clinical Study of the Functional Activity of the Liver will be presented by Dr. L. G. Rowntree, of Baltimore; in the afternoon Dr. John B. Murphy, of Chicago, will give a lecture on Surgery of the Bones and Joints. An interesting feature of the programme will be a symposium on Venereal Disease as a Practical Public Health Problem, which will be presented on Wednesday morning, under the auspices of the Section in Public Health.

Pensions for Members of the Rockefeller Institute.—Pensions for its members and associate members have been provided by the governing boards of the Rockefeller Institute for Medical Research and have been financially secured by Mr. John D. Rockefeller, who has, with this purpose in view, increased the endowment of the institute by a gift of securities amounting to about $500,000 in value. The pension rules which have been adopted provide three quarters pay pensions for members retiring at the age of sixty-five years, after fifteen or more years of service, and pensions of from one half to three quarters of full pay, according to the length of service, for members and associate members who retire at the age of sixty years. There is also a provision for total disability after ten years of service, and for widows and orphaned children, at one half the scale upon which members of the staff are pensioned.

Vital Statistics of New York for the First Quarter of 1913.—If the average quarterly death rate (17.06) for the immediately preceding quinquennium had prevailed during the first quarter of this year, there would have been 1,589 more deaths reported from all causes than actually took place. This is an excellent showing and if the decrease continue in the same ratio it will mean a decreased mortality of over 6,000 during the entire year, compared with that of the previous five years. The causes of death that have engaged the attention of sanitary officials showed considerable decreases in the absolute figures taken in connection with the increased population, for example, typhoid fever a decrease of 60 per cent., measles 40 per cent., scarlet fever 47 per cent., diphtheria, 22 per cent., pulmonary tuberculosis 10 per cent., diarrheal diseases under five years of age 16 per cent.. The decrease in the infectious diseases of childhood was accompanied by a decrease in the number of deaths from acute bronchitis and bronchopneumonia amounting to 10 per cent. The few diseases that exhibited an increased mortality were those which have not as yet entered the list of those against which preventive measures have been taken, for example cancer, the deaths from which increased 10 per cent., organic heart diseases, with an increase of 8 per cent., and lobar pneumonia with an increase of 7 per cent. The number of births reported during the quarter was 34,196, and the number of marriages reported was 11,820.

Medical Alumni of the University of Buffalo Hold Annual Meeting.—The thirty-eighth annual meeting of the Alumni Association of the medical department of the University of Buffalo was held on Tuesday, Wednesday, Thursday, and Friday of last week, under the presidency of Dr. Henry C. Buswell. The afternoon and evening of the first day were devoted to class reunions and dinners, as arranged by class committees. On Wednesday, scientific sessions were held in the morning and the afternoon, and college fraternity reunions took place in the evening On Thursday morning a paper on the Uses of Radium in Surgery was read by Dr. Howard A. Kelly, professor of gynecological surgery at Johns Hopkins University, which was followed by a gynecological clinic by Doctor Kelly. In the afternoon Dr. Richard C. Cabot, of Boston, held a medical clinic, which was followed by an address by Doctor Kelly on Gynecology, Retrospective and Prospective. In the evening the annual dinner of the association, which was the social event of the meeting, was held in the Hotel Statler, Dr. De Lancey Rochester, of Buffalo, acting as toastmaster. Among those who responded to toasts were Dr. Roswell Park, of Buffalo, Dr. Howard A. Kelly, of Baltimore, Dr. S. V. V. Holmes, Dr. Thomas H. McKee, and Dr. W. J. Wickes, of Syracuse, who held a clinic on the anatomy of humor. Friday, May 30th, was devoted to the graduating exercises of all departments of the university. Officers were elected as follows: President, Dr. Grover W. Wende, '89, of Buffalo; first vice-president, Dr. George E. Brewer, '84, of New York; second vice-president Dr. George W. Goler, '89, of Rochester, N. Y.; third vice-president, Dr. Frank W. McGuire, '94, of Buffalo; fourth vice-president, Dr. Cynthia W. Koser, '06, of Williamsport, Pa.; fifth vice-president, Dr. William Irving Thornton, '99, of Buffalo; secretary, Dr. Julius Richter '04, of Buffalo; treasurer, Dr. William F. Jacobs, '08, of Buffalo; trustee for five years, Dr. Henry C. Buswell, '88, of Buffalo; executive committee, Dr. Lesser Kauffman, '04, of Buffalo, Dr. Harry Mead, '91, of Buffalo, and Dr. Edith R. Hatch, '06, of Buffalo.

Pith of Progressive Literature.

CORRESPONDENZ-BLATT FÜR SCHWEIZER AERZTE.

April 5 and 12, 1913.

Experiences with Iontophoresis. — Friedrich Stocker reports *in extenso* the results he has obtained in a large number of various forms of eye and skin disease, and comes to the following conclusions: Iontophoresis, according to Wirtz's method, has proved a valuable therapeutic agent in various diseases of the eye. Its greatest value seems to be shown in the infectious diseases of the cornea, particularly ulcus serpens and interlamellar abscess. In these cases it takes the place of the cautery, over which it possesses great advantages, with none of its disadvantages. Paracentesis of the anterior chamber may very properly be associated with iontophoresis. This form of treatment does not obviate the need of attention to whatever troubles of the conjunctiva and lacrymal sac may be present. The author has never seen any injury of the eye result from the use of iontophoresis.

The New Method of Checking Hemorrhage and Treating Wounds with Kocher-Fonio's Coagulin.—Anton Fonio contributes a very long article on this subject. In general, it may be said that after seizing the bleeding vessels with forceps and ligating them the surface of a wound is dried, coagulin poured over it, and then, if necessary, pressure made for a time. The coagulin is supposed to act in such a way as to produce thrombosis of the vessels. It can also be injected into the veins to arrest hemorrhages from the lungs, when it is thought to be carried by the circulation to the bleeding place in the lung and to there form a coagulum, just as if it had been applied locally.

MÜNCHER MEDIZINISCHE WOCHENSCHRIFT.

April 8, 1913.

Orthostatic Albuminuria in Tuberculosis.—J. Sturm answers the critical comments of Arnold (*Deutsche medizinische Wochenschrift,* 1913, No. 12) on the earlier work of Sturm and Ludke (*Münchener medizinische Wochenschrift,* 1911, No. 19). Arnold obtained his results in cases of tuberculosis of the skin, which condition is sharply separated from general tuberculosis. The author defends even now the thesis that in sixty per cent. of incipient pulmonary tuberculosis cases orthostatic albuminuria is the rule.

The Presence of Spirochæta Pallida in the Central Nervous System in Progressive Paralysis and Tabes Dorsalis.—H. Noguchi, notwithstanding the failures of other workers, has been able to show typically colored spirochætæ with a modified Levaditi's method in forty-eight out of 200 brains of the subjects of paresis, and in one out of twelve spinal cords of tabetic patients. The spirochæta is found more often and in greater numbers in the cortex than in the white substance of the brain, rarely in the neighborhood of bloodvessels, and almost never in the walls of the bloodvessels. The preparations for examinations should be kept as long as possible in formalin before being placed in alcohol.

Chemotherapy of Tuberculosis; Experiments with Borcholin Enzytol.—H. Mehler and L. Ascher found that lezithin and lezithin splitting products (cholin) have considerable antibacteriological power, even in the case of tubercle bacilli. Cholin can be brought into the circulation of tuberculous patients in large quantities without harmful effects as a loosely bound salt (borcholin). In florid tuberculosis morcholin produces a typical reaction. Therapeutic experiments have shown the value of the use of borcholin in tuberculosis.

Pylorus Spasm and Gastric Ulcer.—A. Neudorfer reports the case of a man of forty-three upon whom laparotomy was performed for suspected carcinoma of the pylorus. At operation there was found in the small curvature of the stomach a callous ulcer with marked perigastritis, and a decidedly narrow pylorus suspicious of tumor. Kocher's resection of the pylorus was done without regard to the tumor in the fundus. The operation was completed without untoward results, the patient recovered, and the callous tumor healed completely, as could be seen by the Röntgen rays. The microscopical examination proved the suspicion of carcinoma unwarranted.

Unusual Indication for Intestinal Resection.—C. Sultan reports the case of a woman whom he was about to curette for endometritis. In the uterus was felt a tumor, which he considered a polyp, and drew out with forceps. It proved to be intestine, and a laparotomy was done, with resection of twenty centimetres of the gut. Recovery followed. The cause for the perforation of the uterus remained unsolved. The woman had for a long time, however, worn a uterine obturator, and this in all probability had produced a sore in the wall of the uterus.

Acromegaly Following Castration in an Adult Woman.—K. Goldstein reports the case of a woman, now forty-eight years old, who had always been conspicuous for her large bony framework and upon whom a panhysterectomy had been performed at the age of thirty-nine for myoma of the uterus. Since the operation the hands, feet, face, and chin have become larger, the whole body has become fat, and perspiration is profuse. No signs of an organic brain disease are present. The fundi and field of vision are normal. In radiographs no enlargement of the hypophysis is visible. The regulating endocrin apparatus was probably originally destroyed and lost its balance completely by the castration.

April 15, 1913.

Testing the Kidney Function.—Schlayer found that the intravenous injection of milk sugar for the purpose of testing the functionating of the kidney frequently produces chills and fever, owing to faulty sterilization and the use of contaminated molds. Sterilization for one hour in a steam bath at 100° C. seems to be the best method of preventing this. The milk sugar test is not a sufficient test in the ordinary sense of the term, but a means of recognizing the kind of kidney trouble. Only the quantitive determination of the examination of the milk sugar has a diagnostic significance.

General and Local Eosinophilia in Oversensitiveness for Organic Arsenic Preparations.—H.

Schlecht relates two cases of oversensitiveness to organic arsenic preparations (arseno phenylglyzin and salvarsan) noteworthy because of the appearance of an extensive exanthemata and a local and general eosinophilia. There are two possibilities for the causation of this eosinophilia, either a local injury to the cell or proteid by the eosin, and therefore local production of eosinophilia, or the entrance of a toxine, formed somewhere in the blood, into the skin and a secondary attraction of the eosinophils.

April 22, 1913.

Galvanic Stimulation of Muscles and Nerves in Pregnancy and the Tetany of Pregnancy.—L. Seitz found in the last months of pregnancy, in eighty per cent. of pregnant women, a slight rise in the galvanic irritability which reaches its zenith during birth and declines in the puerperium. In about ten per cent. of all pregnant women an almost subtetanic state is present. During pregnancy there are singular attacks of asthma, often combined with nausea and trembling of the extremities, which are due to a latent tetanic condition (parathyrotoxicoses).

Exposure of Inoperable Carcinoma of the Stomach for Illumination by Röntgen Rays.—Finsterer advises that resection of the carcinomatous stomach should be done in all cases where such a procedure is technically possible. It may be performed under local anesthesia if the general condition prohibits general anesthesia. After the resection of advanced carcinoma the process of deep illumination, even after secondary exposure of the field of operation, will bring about a lessening of the chances of recurrences and the formation of metastases. In inoperable carcinoma the diseased stomach should be freely exposed by the splitting of both recti, and fixation of both lobes of the liver to the border of the ribs, thus making possible a direct and long continued Röntgen illumination. Noteworthy results have been obtained in hopeless cases. In all these cases a large gastroenterostomy should be made as near the fundus as possible, and if this is no longer feasible, a jejunostomy should be added for the purpose of isolating the exposed stomach.

Producing Complement Binding Reactions by the Addition of Chemical Substances to the Normal Serum.—E. Rominger was able by the addition of certain substances to change normal blood serums to such a degree that they gave positive complement binding reactions with certain extractives. Serums, to which carbohydrates had been added, gave positive reactions with blood extractives, but not with the extract of guineapig heart or with tuberculous extractives. By the addition of certain acids a positive Wassermann reaction can be produced, and also a tuberculin reaction, while complement binding with blood extractives could not be established. These experiments prove that complement binding reaction does not depend upon a specific formation in the body, but upon the admission to the blood of abnormal substances from the pathologically changed tissues.

Tuberculosis of the Glands of the Neck and Its Relation to the Tonsils and Lungs.—G. Trautmann relates the case of a girl of eleven years, with healthy lungs and good teeth, who suffered for four months with abscess of the glands of the neck of the size of a child's fist. Incision; healing of the abscess, with formation of a fistula. During a second operation a number of cheesy nodules were removed from the neighborhood of the confluence of the jugular veins. Extirpation of the macroscopically normal appearing tonsil of the same side was performed. Microscopical examination revealed a typical epitheloid celled tubercle with giant cells. In this case, then, the tonsil was the primary tuberculous host.

Malignant Pemphigus Cured by One Intravenous Injection of Blood.—G. Praetorius reports that a woman, forty-eight years old, suffering for two years from a severe pemphigus, which had resisted all therapeutic measures, was completely cured by one intravenous injection of twenty cubic centimetres of nondefibrinated, fresh human blood. The cure has now lasted uninterruptedly for eight months. By rapid manipulation and the use of fine cannulas, which prevent the passage of large coagulæ, there is no danger in the use of nondefibrinated blood.

ZENTRALBLATT FÜR CHIRURGIE.

April 19, 1913.

Vascular Paralytic Gangrene Due to Cold.—Wieting states that many of the soldiers in the Turkish army developed symmetrical gangrene of the toes or feet from the effects of cold, although the temperature of the rain or mud in which they had to stand never fell as low as the freezing point. Some had to stand for one or more days in the mud of the rifle pits, and others were exposed to the cold winds. Almost all the patients were badly nourished and had suffered from intestinal troubles, either at the time or shortly before. The cases were most numerous before Tschataldja, where circulation was not maintained by marching or other bodily exercises, and the disease appeared coincidentally with the onset of cholera and dysentery. In the mildest cases the symptoms consisted of a more or less severe itching and pain in the toes or the foot, often without visible lesions, sometimes with edema or a slight redness. In other cases trophoneurotic symptoms were present; others had chilblains, blisters, and gangrene. All had paresis of the capillary vessels at least, the worse ones, of the deeper vessels, with stasis and thrombosis. Nearly all who did not die of other diseases recovered under conservative treatment. Amputation was performed in only one case.

Paresis of the Phrenic Nerve after Local Anesthesia of the Brachial Plexus.—Albert E. Stein reports an unsuccessful attempt to anethetize the brachial plexus in a young woman, twenty years of age. No fluid was injected, as the symptoms, indicating that the brachial plexus had been reached, failed to appear, but a severe attack of neuralgia and paralysis of the phrenic nerve followed; apparently induced by the injury done in introducing the needle. This case teaches us that great care must be exercised in the use of this method, especially when it is desired to anesthetize the plexus on both sides, either at one sitting or at two sittings a short time apart.

PARIS MÉDICAL.

May 3, 1913.

Value of Cystoscopic Examination in Cancer of the Uterine Cervix.—H. Hartmann reports the results of cystoscopic observations made by Cruet in cases of cervical cancer, and points out the value of such an examination to ascertain the condition of the floor of the bladder and the ureters before operation. Suggestive findings are an elevation of the floor of the bladder, hyperemia of the elevated portion, folds of the mucous membrane, and local edema. The latter may be diffuse or give rise to large parallel folds or bullæ. Definitely characteristic of cancer, however, are small, white, smooth granulations encrusted in the mucosa, or hard, opaque nodules. Partial retraction of the trigone, provided it be a true one and not due to elevation on the opposite side, is also an important finding. The ureteral orifices may be edematous or raised in the form of volcanoes. Compression of the ureters by the growth are indicated by a delayed, strengthened, or divided discharge of urine from them and by absence of infolding of the vesical mucous membrane after each discharge.

PRESSE MÉDICALE.

May 3, 1913.

Cutaneous Exanthems in the Diagnosis of Leucemic States.—A. Nanta asserts that the polymorphous skin lesions occurring in leucemia, which Audry has designated "leucemides," are equally as important from the diagnostic standpoint as erythrodermia or leucemic tumor formations. He reports the case of a woman with markedly enlarged spleen and liver, prominent neck glands, and white cell count of 21,700, who suddenly produced an eruption consisting of macules, papules, vesicles, and pustules, corresponding in intensity and distribution with a moderate syphilitic roseola. These lesions were especially numerous on the trunk, but also present elsewhere. More characteristic, furthermore, were some large, red, flattened nodules, accompanied by marked itching, which appeared chiefly on the arms, more sparsely on the face, neck, back, and lower limbs. Some of these were surmounted by small pustules or vesicles, and all involved the hair follicles. This patient had at first been considered to have an intraabdominal malignant tumor, but the fact that she did not get worse, and the skin eruption, which had already occurred in a similar form a year before, finally led to a search for the visceral signs of a leucemia, the presence of which was then demonstrated.

ARCHIVES DES SCIENCES BIOLOGIQUES, ST. PETERSBURG.

Vol. XVII, No. 4, 1913.

The Lipoids in the Presence of Chronic Tuberculous Infection.—D. P. Griniew found in guineapigs that the lipoids in the cells of nearly all organs and tissues of the body undergo marked changes in tuberculosis. The aggregate of the lipoids and the phosphorus they contain diminish in almost all organs, while the lecithin is decreased in all without exception. The organs suffering the most are the lungs, and next to these the spleen, cord, and liver.

Action of Salvarsan on the Viscera.—I. I. Chirokogorov administered salvarsan by subcutaneous or intramuscular injection in doses of 0.03 to 0.1 gramme per kilogramme to dogs and rabbits, and in doses large enough to kill some of the animals, to mice. No fatty changes in the viscera were found in the dogs sacrificed for examination, but two out of four rabbits showed slight fatty agglomerations in some of the cardiac muscle fibres, as well as considerable deposits of fat in the liver cells; in one of these rabbits the kidneys showed merely a pronounced hyperemia, but in the other distinct fatty changes were noted in the epithelia of the loops of Henle in the kidneys and here and there in the convoluted tubules. In the mice, fatty degeneration was practically limited to the liver. Although the changes referred to were found only in a portion of the experimental animals, the author, having examined control animals as well, is convinced that the degeneration was sometimes due to the salvarsan. The power of resisting the effects of the drug appears to him to vary widely in different individuals of the same species. That the pathological effects noted in the experiments sometimes occur in human subjects treated with salvarsan Chirokogorov deems probable, since similar fatty changes have been found in the liver, kidneys, and heart of some of the patients who have succumbed after the administration of the drug.

JOURNAL D'UROLOGIE.

January, 1913.

A Case of Death from Gaseous Emboli Following the Injection of Air into the Bladder.—Nicolich had a death following the air inflation of the bladder preliminary to a prostatectomy. Stovaine spinal anesthesia was used, and the author thought it possible that death was due to this. At autopsy the ventricle of the heart and portions of the abdominal vena cava were filled with air.

Case of Death by Gaseous Emboli in the Course of Prostatectomy.—Marion had a case similar to the preceding, excepting in this case Marion observed emphysema of the prevesical cellular tissue before the death of the patient. There ws no autopsy in this case.

Simple Ulcer Perforating the Bladder.—The patient, a woman of fifty-eight years, was operated upon for a strangulated hernia. Twenty-two days after the operation, as the patient was about to urinate, she was seized with intense abdominal pain, and urination was impossible. The patient was catheterized and clear urine obtained from the bladder. Thereafter the urine was all drawn by catheter. The abdominal pain and rigidity continued. Various diagnoses were made, and the patient finally died. At autopsy the abdomen contained urine and a perforation of the bladder was found at the site of a simple ulcer.

February, 1913.

Leucoplakia of the Kidney Pelvis.—Lecene states that this patient's principal symptom was pain in the kidney region. The right kidney could be palpated, and it showed a diminished function and pus on ureter catheterism. Nephrectomy was performed. The kidney pelvis was the site of an extensive leucoplakia.

Plastic Operations for the Treatment of Renal Retention.—Eliot reviews 107 operations which he has collected from the literature. These were: Destruction of valves in the kidney pelvis, reimplantation of the ureter at the lowest portion of a distended pelvis, plastic operations on the ureters and kidney pelvis, lateral anastomosis of the ureters and pelvis, and resection of various portions of the kidney. The best result from the cases collected were in simple hydronephrosis, and the operation was ureteroplastic or ureteropyeloplastic. Of nineteen patients operated upon, eleven were clinically cured. If hydropyonephrosis is present the kidney must undergo a preliminary drainage before any plastic operation is performed.

Spontaneous Fracture of a Vesical Calculus.—Christian reports a case in which two calculi as large as an English walnut were removed from the bladder. These calculi absolutely fitted together, and had evidently been a single one which had ruptured.

March, 1913.

Early Diagnosis of Renal Tuberculosis.—Bazy calls attention to the symptom complex first formulated by his father, of hematuria, nocturnal polyuria, and the loss of the brilliancy of the urine. This symptom complex he believes to be of much value in making an early diagnosis of renal tuberculosis. A patient, twenty-seven years of age, had suffered from his first hematuria a year before. Since then he had had nocturnal polyuria (urinating three or four times each night). The catheterized urine was absolutely clear, but it had "lost its brilliancy." Ureter catheterism showed a tuberculosis of one kidney, and this kidney on removal was found to have tuberculosis papillæ.

Operation for the Extirpation of Large Cancer of the Prostate.—Gayet, Champel, and Fayol have devised the following operation: The patient is first placed in a kneeling position, and a curved incision begins about two inches above the rectum, goes to the left, and, after encircling the rectum, ends about two inches below the rectum. The incision continues in the median line to the scrotoperineal junction. The rectum is pushed to the right, and the prostate exposed. The patient is now placed in the lithotomy position. The urethra is cut through. The entire neck of the bladder, nearly up to the ureteral orifices, is excised. A tube is placed in the bladder and fixed in the perineum, and the perineum is restored as completely as possible. The authors have operated in two cases. In the first the patient has complete control of his urine, a year after operation, has kept his weight, and is in good condition. The second remained in good condition for four months after operation.

BRITISH MEDICAL JOURNAL.

May 17, 1913.

Internal Secretions in Relation to Dermatology.—Malcolm Morris calls attention to some of the more frequent dermatoses, associated with definite myxedema on the one hand and with exophthalmic goitre on the other, as indicating the possible relations between certain obscure skin lesions and disturbance of the function of the thyroid gland. Psoriasis, certain cases of pruritus, eczema of a chronic type, Darier's disease, ichthyosis, scleroderma, cheloid, multiple warts, certain cases of acne vulgaris, rosacea, rhinophyma, lupus, and a number of affections of the hair and nails have in many instances resisted all treatment only to yield to the proper administration of thyroid extract. The difficulty arises in many of these conditions in determining whether or not the thyroid is at the bottom of the disturbance, for, while some cases are cured by it others are not affected at all. Above all others psoriasis is the condition in which thyroid treatment gives the best results. Where the cutaneous affection is found associated with such conditions as obesity, infantile wasting, rickets, osteomalacia, chronic articular or muscular rheumatism, hemophilia, etc., there is presumptive evidence that the skin symptoms will respond well to the exhibition of thyroid. Others of the ductless glands, and those having definite internal secretion, are probably also associated with certain forms of cutaneous disease, but the association is far less well understood than is the case with the thyroid. Some cases of acne seem to be benefited by thymus. Cases of urticaria and angioneurotic edema, and some of acne and lupus, have responded to pituitary, thymus, or suprarenal capsule.

Treatment of Congenital Dislocation of the Hip.—A. S. Blundell Bankart criticises Lorenz's methods on a number of points. In the first place there is far too much traumatism in his operation, and it is not true that all of the soft parts have to be so stretched or torn as to offer no resistance before reduction can be made. Further, the constant pull of the muscles upon the femur is a great aid in the formation of a new joint cavity, and the stretching and tearing of muscles deprives the Lorenz operation of this advantage. The head of the femur is thrust forward in the Lorenz position and tends to project in front. In fact, it often passes in front of the acetabulum, and an anterior transposition results. When the Lorenz position is maintained for too long a time the shortening of the structures behind the joint is so great that inward rotation is not possible, and great disability results. The stretching of the hamstrings by extension of the knee is very prone to cause redislocation of the head of the femur, and the knee should be included in the plaster for some months to avoid this danger. The alleged importance of the "grinding" movements to facilitate the formation of a cavity for the head of the femur is a decided fallacy of the Lorenz procedure. The changes in the bone when covered by cartilage are not to be secured by "grinding," but by constant pressure, which should be produced by the action of the muscles of the thigh. Bankart reduces the congenital dislocation by the method of Ridlon, over the inferior border of the acetabulum. The knee is grasped and the limb fully flexed, both at the hip and knee; thus directing the head of the femur downward. Pressure is then made directly downward upon the knee—great pressure if necessary—so that the head is driven down below the acetabulum. Counter pressure is made on the tuberosity of the ischium, and the position of the head is determined by palpation through the buttock. When the head has been brought below the acetabulum, the thigh is abducted, the head passing up-

ward over the lowest part of the rim into the acetabulum. No violence is employed and there is a minimum of trauma to this operation. Shock is infinitely less than in the Lorenz method. The operation is not so greatly limited by the age of the patient as is the Lorenz, and can be applied to youths, or even adults. The patient is put up in plaster while under the anesthetic and the Lorenz position is used, care being taken, however, that the head of the femur is not displaced too far forward. The opposite side should be included in plaster and the knee of the affected side also. The position should be verified by the x ray at once, and rectified if imperfect. After there has been sufficient retraction of the soft parts behind the head, the position should be changed to one of slightly diminished abduction with about 45° of internal rotation.

Chronic Arthritis.—D. W. Carmalt Jones treated twenty cases of this affection with vaccines made from streptococci obtained from the mouth, urine, or feces of the patients, and obtained a cure in one, marked improvement in six, and aggravation of the symptoms in one. The remained showed no improvement, or, at most, very slight. He believes that the therapeutic test is strong evidence that the streptococcus was the cause of the disease in the cured and improved cases and in the one which became worse.

LANCET.

May 17, 1913.

Some Points in Determining the Signification of Albuminuria in Pregnancy.—Herbert Williamson puts two questions: 1. "Can we distinguish between an albuminuria the result of chronic nephritis and an albuminuria due to pregnancy toxemia?" and, 2, "In a case of chronic nephritis, can we tell when pregnancy toxemia has been grafted on to the old kidney lesion?" and proceeds to answer them in the affirmative. He believes that a condition of acidosis in the urine and blood is found constantly in cases of pregnancy toxemia when the lesions are of a certain severity, while it is not found in cases of chronic nephritis, even when the symptoms are very severe. The onset of an acidosis in the course of a chronic nephritis in pregnancy may be interpreted to mean that toxemia has been added to the existing lesions. These tests, however, fail in many of the earlier and slighter cases. The symptoms are probably not due to the acidosis—in fact, some of Williamson's results tend to disprove this theory, because the symptoms are often present before any acidosis can be demonstrated. On the other hand, treatment which reduces the acidosis brings about an alleviation of the symptoms. Marked improvement sometimes follows the intravenous infusion of solutions of sodium acetate or bicarbonate in severe cases of eclampsia. Williamson accepts the recent view that the source of the toxines can be definitely stated to be the trophoblastic layers of the chorionic epithelium.

The Influence of Chronic Sepsis upon Eye Disease.—William Lang finds no less than 215 cases of eye disease of one kind or another which could be attributed to the effects of sepsis in some other portion of the body, 180 being due to alimentary toxemia, and of these, 139 to oral sepsis. On the other hand, he can find, in the same series of records as that from which the 215 cases were culled, only 168 cases of eye disease which were attributable to one or another of all the other causes. He finds that the proper treatment of the focus of septic infection is alone sufficient in many cases to cure the eye trouble; in others, however, it must be combined with some local measures directed to the eye. The essential features in eye work would seem to be a careful search after a source of septic infection and the proper attention to the condition of the teeth, if many otherwise obstinate cases are to be cured.

Chloretone Overdose.—W. Essex Wynter prescribed five grain capsules of chloretone to be used as a prophylactic against seasickness, and his two patients, man and wife, took eighty-four of these capsules on the trip from England to America and return. This is equivalent to about 100 grains apiece for each six day trip. While on the water the drug accomplished its purpose, though the trip was rough, but after landing in the United States, and during their three weeks' stay, the patients experienced sensations of incoordination, fullness in the head, and lack of spirits. Even after a fortnight these symptoms were very noticeable. After two weeks following their return trip and their second courses of 100 grains each, both showed contracted pupils, small tense pulse, and suppressed knee jerks. There were also incoordination, vertigo, dullness of sensation, and sense of effort in movement. Taste and smell were greatly reduced, and some patchy anesthesia was present. Mental confusion and defective concentration and memory were present from the beginning; there was striking susceptibility to alcohol, a glass of wine inducing intoxication. Hot fluids produced similar, though less marked, results. Headache, which was present, was rendered almost intolerable by the use of acetanilide. The general mental state was one of dullness and drowsiness by day and disturbed sleep by night. Wynter attributes these symptoms to the cumulative effect of the drug, partly due to its being taken in capsules; so that, being insoluble, it was retained in the intestine, dissolving from time to time in fat or alcohol, and undergoing absorption.

A Contribution to the Etiology of Rheumatoid Arthritis.—H. Warren Crowe has isolated an organism from the urine of a large proportion of cases of rheumatoid arthritis, sometimes in pure culture, and at others in mixed, which he calls the *Staphyloidcoccus A*. Its shape and color in colony on neutral red egg medium are sufficient points on which to base a diagnosis in general work. Not only is the organism present in a very large proportion of the cases, but agglutination tests show its specific nature, and render it likely that it is at least one of the causative organisms of the disease.

The Use of Vaccines in the Treatment of Rheumatoid Arthritis.—A. Bertram Soltau has treated a considerable number of cases of this disease with vaccines made from the *Staphyloidcoccus A*, described in the preceding article by Crowe, and has had very brilliant results in several. Where the urinary culture yields a pure growth of this organ-

ism he uses a stock culture obtained from another case; where the urinary growth is a mixed one he treats the patient with vaccines made from both the *Staphyloidcoccus A* and from the other organisms present, if they are of known pathogenic species. In the use of the vaccines from the *Staphyloidcoccus A* it is striking that very small doses have to be employed, or the reaction may be quite severe—seldom more than 500,000 organisms can be given at the first dose. Increase in the size of the dose must be made slowly and be gauged according to the reaction. The injections are best given about a week apart.

BOSTON MEDICAL AND SURGICAL JOURNAL.

May 22, 1913.

Treatment of Laryngeal Stenosis Following Diphtheria.—D. L. Richardson emphasizes these points: Intubation should not be prolonged much beyond a month. A low tracheotomy should be performed. Intermittent dilatation under direct vision until the larynx reaches about normal size, and then only when stenosis develops. Tracheotomy affords rest to the larynx and gets rid of a foreign body. The danger of coughing up the laryngeal tube is eliminated. The treatment would seem to require a shorter period of time than that required for continued intubation with the hope of better results.

The Favorable Influence of Periods of a Protein Free Diet in Chronic Nephritis.—Harry W. Goodall says that a protein free diet can be maintained for a continuous period of from five to ten days without harm to the individual. With such a restriction the accumulated end products of protein metabolism in the blood are promptly eliminated and the nitrogen content of the blood falls to normal, while the kidneys and heart are given an opportunity to rest. Such a restriction may be followed by a low protein diet for a considerable period of time, even in advanced cases of chronic nephritis, without a return of the disagreeable symptoms. The following procedure is advised as the dietetic treatment of chronic diseases in which there is a retention of nitrogenous end products: A protein free diet for from five to ten days, according to the severity of the disease; at the end of this period amounts of protein not exceeding sixty grammes daily should be added, and maintained until either the resulting improvement of the patient will permit of a further increase, up to ninety or one hundred grammes as a maximum, or the symptoms indicate that there is a reaccumulation of waste products. In the latter case the protein free diet should be repeated. The diet should be supervised and be controlled by the urinary nitrogen.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

May 24, 1913.

An Attempt to Interpret Present Day Uses of Vaccines.—Theobald Smith emphasizes the fact that all parasites tend to increase the resistance of the host in which they live and multiply, and out of this fact numerous problems arise. Is it worth while, in any given disease, to attempt to raise this immunity, and how much energy will it cost the patient? If it be worth while, What is the best and most economical way of artificially increasing this immunity? In any localized infection the question arises, Is this an initial process lacking attendant immunity, or is it a residual process associated with general immunity? If the latter, vaccines may be used with safety. In processes associated with a febrile movement and bacteremia, we should not interfere until we know whether we have a progressive disease with gradual undermining of the resistance or a more localized affection in which the excursions with the blood are secondary. The use of vaccines in these cases must be regarded in the light of an experiment, and should only be resorted to in conjunction with one trained in immunological problems. In short, vaccines applied during disease will be rarely, if ever, a means of saving life, but they may hasten a stationary or languid process which naturally tends toward recovery by eliciting the unused reserves of various tissues.

The Germicidal Efficiency of Commercial Preparations of Hydrogen Peroxide.—P. G. Heinemann states that for practical use in rendering water and milk safe, hydrogen peroxide solutions must be considered strictly in the light of emergency measures. The complicating factors are expense, uncertainty of composition, and its possible influence on organic constituents and enzymes. The use of hydrogen peroxide solutions can be recommended only if pure solutions are available, but this method of procedure can never replace efficient water filtration or the efficient pasteurization of milk.

Oily Injections of Salvarsan; a Warning.—H. H. Hazen reminds us that while oily injections of salvarsan have been recommended by various men, these have subsequently abandoned them without publishing their reason for so doing. Furthermore, as some of the best pharmaceutical houses are now marketing preparations of salvarsan in oil, the writer is constrained to give his experience in their use. He concludes his recital by stating that in view of the tendency for late abscess formation following oily injections of salvarsan, and in view of the pain incident to all other methods, the intravenous method should alone be used, but very carefully in certain patients, notably those with disease of the heart or of the central nervous system.

A Method of Controlling Rectal Hemorrhages.—B. L. Myers suggests the following novel technic: A piece of gauze about eighteen inches square is spread in a single layer over a Kelly proctoscope, and petrolatum is rubbed into it thoroughly. The proctoscope is then inserted into the rectum well past the sphincters. The obturator is withdrawn and the invaginated piece of gauze is packed, through the proctoscope, with a ten yard, one inch gauze bandage, the proctoscope being withdrawn as the invaginated gauze is ballooned up. When the packing fills the rectum and the proctoscope is withdrawn, the loose edges of the invaginated gauze are twisted tightly together, which binds the packing into a hard mass. The hemorrhage is thus completely stopped. Thirty-eight hours later the packing may be easily withdrawn without hurting the patient or starting the

hemorrhage again, by catching the external end of the bandage used as packing and drawing it out. The invaginated piece of gauze collapses and easily slips out.

An Original Method of Testing for Potassium Iodide in the Urine.—Henry Power asserts that this method will indicate the presence of the drug in one fifth of one per cent. and is besides free from the objection of possible confusion with the indican test. The required materials are boiled solution of starch, a small platinum or carbon electrode, any convenient source of direct electric current, and a white evaporing dish. Urine is mixed with starch solution in the dish, and the two electric poles are immersed in the fluid, the positive pole being carbon or platinum. A current of from three to ten milliampères is allowed to pass through the liquid mixture, and in a few seconds the starch about the positive pole is seen to turn blue as a result of the iodine set free from the iodide and uniting with the starch, forming the blue iodide of starch.

MEDICAL RECORD.

May 24, 1913.

A Consideration of the Therapeutics of Intestinal Autointoxication.—The putrefaction referred to by William Harvey King in this article is due to the anaerobic bacilli, the presence of which in the intestines is caused by the absence of oxygen, which has been consumed by the colon bacilli. There is putrefaction, with a correspondingly large gas volume, always above fifty per cent. and generally ranging from ninety to 130 per cent. Indol is increased in amount, and skatol to a marked degree; so abundant is it sometimes that it gives the peculiar odor of skatol to the entire fecal mass. Indican is found in the urine in large amounts, but as it varies with the different degrees of concentration, as well as at different times of the day, it is not a reliable guide as to the amount of putrefaction present. A special form of local medication for the eradication of this putrefactive condition when located within the large intestine is outlined by the writer. This eradication is more or less permanent, according to the thoroughness of the treatment, and the subsequent care of the patient's diet and hygiene. The object sought in the treatment is not only the oxidation of the surface of the intestinal lining, but also to carry this oxidation within the glandular cells and tissues of the membrane. A high enema of plain water is given to empty the bowel of fecal matter, so that the antiseptic afterward employed will not be expended solely in destroying this dead matter, and to cleanse the membrane that a better osmosis or anaphorius may take place. A colon rectal tube is employed, and the water is slowly and carefully introduced, and held for a few minutes before the patient goes to the closet, where the bowel is thoroughly emptied. A second injection, consisting of normal salt solution and fresh electrozone (two ounces per quart) is introduced through a hollow electrode, which conducts the fluid and the electric current. A large electrode, which thoroughly covers the abdomen, is placed directly over the transverse colon, and to this is attached the positive pole of a continuous current. The clinical results of this treatment, from eight to twenty treatments given daily, show a disappearance of the insomnia and the other conditions dependent upon the autointoxication.

The Prevention of Adenoids.—William Brady concludes that the principal prophylaxis against adenoids is the avoidance of overheated living rooms. The family should be trained to acclimate themselves to an average temperature of 60° to 65° F. throughout the winter, instead of the usual one of 75° F., or more. Start at the beginning of cool weather in the fall, and regulate the temperature by the thermometer rather than by personal feelings, and such a moderate temperature will be comfortable to everybody, young and old. With the removal of the enervating, debilitating influence of highly heated air, the nasopharyngeal mucosa will withstand its daily assailants. There will be no adenoids.

AMERICAN JOURNAL OF SURGERY.

April, 1913.

Renal Lithiasis.—J. Bently Squier describes as follows the incision of exposure of the kidney, which differs from the usual vertical incision and has many advantages in its favor: A longitudinal incision, commencing from just below the last rib and extending three inches downward, is made over the belly of the erector spinæ. The posterior sheath of the erector spinæ is opened the whole length of the skin incision, and the outer cut edge is reflected outward. The belly of the erector spinæ is retracted inward, exposing its anterior sheath. Incision into the upper part of the anterior sheath opens up the posterior superior lumbar triangle just below the last rib. The last rib is then cleared of muscular and ligamentous attachments up to its head. The incision is enlarged downward by cutting a few fibres of the quadratus and lumbar fascia. The writer states that the chief advantages of such a method of kidney exposure are: The ease with which a kidney can be brought out on the loin, the minimum of pull upon the pedicle when it is on the loin, and the absence of danger of postoperative hernia forming in the wound.

Kidney Stone Diagnosis.—B. Lewis presents a short working formula for physical examination which will lead to satisfactory results in nearly all cases of nephrolithiasis: 1. If there are urinary disturbances of any sort (no matter what the "symptom" prevailing), examine the urine—preferably divided into two clean glasses while being passed. 2. Cloudy, bloody, or murky urine indicates the necessity of microscopical examination, with and without staining of the sediments. 3. If the clouding is from phosphates or urates it may be negligible; if from blood or pus, the duty staring one in the face is to learn (a) what part of the urinary tract it comes from; and (b) its causation. 4. If the bleeding or suppuration is proved to be in the lower part of the tract, there is no need for cystoscopy, but if this cannot be established, and there is good reason for suspecting the upper tract, the direct and unavoidable indication is for cystoscopy. It means cystoscopy and double ureteral catheterization, with sounding of the ure-

ters for obstruction, and drainage of the respective kidneys independently, with searching investigation of the two urines thus obtained, and detection of any pathological features present, such as pus, blood, casts, bacteria, epithelia, etc. 5. Identification of pus or infection in either kidney commonly indicates the application of the x ray photograph of that side, with or without the coincident use of radiograph ureteral catheters or collargol injections for further elucidation.

Resection of the Ureter.—Howard Lilienthal has used the following method with most satisfactory results in twenty cases: Having performed nephrectomy, an ordinary ureteral bougie, about the size of No. 10 to 12 French, is pushed down through the ureter from its upper divided extremity to the bladder, and tied in place with a ligature. The ureter is now digitally isolated through the nephrectomy wound as far down as possible. The nephrectomy wound may then be closed by suture in the usual manner, with drainage by tube, gauze, or rubber dam. The patient is next placed upon his back and a short inguinal incision parallel to Poupart's ligament, seldom more than two inches in length, its lower extremity being close to the external border of the rectus, is carried down through the tissues as far as the peritoneum. Now the finger is used to push the unopened peritoneum away from the pelvic wall. The ureter, with its contained bougie, is extremely easy to recognize, and in fact can hardly be missed. With the back of the finger toward the pelvic wall, the ureter is peeled away from the peritoneum. The danger to the great iliac vessels is practically zero, since the ureter always adheres to the peritoneum and is lifted away with that structure. With a little manipulation the ureter is drawn out of the wound, loosened from below upward, and is drawn (as a rule very easily), with its contained bougie, out at the inguinal wound. The bougie is now extracted, and it will be found that the entire ureter, down to its termination at the bladder, can be drawn up into the wound. Here it is ligated, cut off, and the stump carbolized. The wound is closed with three layers of sutures, with or without drainage. This method of removing the ureter adds seldom more than ten or fifteen minutes to the length of the operation, and we then have the great satisfaction of knowing that the entire tuberculous focus has been extirpated.

ANNALS OF SURGERY.

April, 1913.

Congenital Internal Hydrocephalus.—Irving S. Haynes presents two cases in which he drained the cisterna magna into a cranial sinus. The operative procedure consists in exposing the occipital bone from the margin of the foramen magnum to above the occipital protuberance by a median incision with lateral reflection of the periosteum and the attached muscles. The bone is trephined over the midpoint between the foramen magnum and the occipital protuberance, and from this opening the bone is removed upward, so as to expose the termination of the longitudinal sinus. With a manometer the pressure in the cisterna magna and in the sinus is recorded. The cisterna magna is now connected with the occipital sinus, if it shows large enough, or with the torcular, by means of a rubber tube having an internal diameter of 1.5 mm., and sutured in place, the tube, silk, and needles having been previously sterilized in petrolatum. The tubes used are of firm consistence, with an internal diameter of from 1.5 to two mm., and varying in length from three quarters to one inch. The tube is to be let into the cistern and sinus through minute incisions that would be completely filled by the tube. The operation is completed by closure of the soft parts after packing the débris of bone in the gap in the skull. The first case showed much improvement for four weeks and then returned to the original state, but to a lesser degree; the second case did nicely for two weeks, and then died in consequence of displacement of the tube in the dura and the too rapid loss of cerebrospinal fluid.

The Embryogenetic Relationships of Tumors of the Kidney, Suprarenal, and Testicle.—Louis B. Wilson makes a study of the operative and autopsy material from the Mayo clinic, consisting of ninety-two renal tumors, three adrenal tumors, and twenty-one testicular tumors, and makes the following summary: Renal tumors: 1. Of ninety-two renal tumors studied, there were three pelvic papillomas, four carcinomas, one squamous celled epithelioma, one adenoma, one fibroma, seven sarcomas, one Wolffian tumor, three embryomas (Wilm's tumors), and seventy-one mesotheliomas. 2. The first two apparently arise secondarily to chronic irritative processes in the adult. 3. The third is probably a rare ectodermal inclusion within the renal pelvis. 4. The embryomas, according to Wilms, are derived from inclusions of the lateral embryonic plate within the caudal portion of the nephrogenic cord in the early embryo. 5. The most numerous of the renal cortex, the so called hypernephromas or Grawitzian tumors, are apparently mesothelomas derived from the nephrogenic vesicles which have failed in the early embryo to form a tubular connection with the renal pelvis. 6. Most of the few true sarcomas of the kidney develop primarily in the adult tissue of the renal capsule and involve the cortex secondarily. 7. The renal cortex is also frequently the site of inclusions from the mesonephros and rarely of inclusions from the suprarenal gland. Rarely, if ever, do either of these inclusions in the renal cortex form malignant tumors. Adrenal tumors: 1. Of the three primary adrenal tumors, one was adenoma, and two were hypernephromas from the adrenal cortex. 2. Primary malignant tumors of the adrenal are either round celled sarcomas or more frequently hypernephromas. 3. Adrenal hypernephromas frequently induce abnormalities of sex and strength. 4. Tumors of the adrenal, in whatever stage of their development, bear no histological resemblance to most mesotheliomas (so called renal hypernephromas). Testicular tumors: 1. Of the twenty-one testicular tumors, nineteen were teratomas. 2. Teratomas of the testicle, in harmony with Ewing's hypothesis, arise from sex cells whose normal development has been suppressed.

Infections of the Hand.—L. W. Hoon and G. J. Ross, following the technic and teachings of

Kanavel in the treatment of ninety cases of infected wounds of the hand, draw the following conclusions: 1. There were sixty-seven cases of simpler infections which were saved from becoming serious infections by simple treatment. 2. The beautifully simple anatomy of the hand and forearm in relation to infective processes, as emphasized by Kanavel, forms an amply sufficient foundation upon which can be successfully built up treatment for simple or grave infections of these parts. 3. For the twenty-three cases of deep infection the incisions recommended by Kanavel resulted in the most perfect restoration of function, with the least after scarring. 4. An utter disregard of the so called danger of the opening up of uninfected areas in the hunt for pus did not result in harm. Incisions into doubtful areas were always made before opening into obviously pus filled areas. In our future cases we intend to open up areas in which we cannot say definitely whether there is or is not pus, using the same incision as should be employed for opening up obviously infected pockets. 5. Rendering the operative field bloodless before operation, and subsequent release of the bandage, is an unnecessary procedure. 6. Conservative irrigation did no harm, but just as good or better results were obtained by merely washing off what pus could be brought out by very gentle pressure. 7. Bending or extending of the fingers, in a day or so after operation, was found to be entirely free from danger of spreading the infection and of paramount value to the patient in securing for him an afterward useful hand. 8. Incisions upon the back of the hand are rarely needed. The redness and edema commonly present upon the dorsum in these cases is extremely dangerous, because it often leads the uncertain practitioner to cut into pus free areas, and then, finding no pus, to adopt one of the fatal policies of poulticing or waiting until the abscess shall "come to a head." Meanwhile, the increasing infection may cause bone or tendon necrosis, with crippling that no amount of carefully made incision or faithful postoperative massage will wipe out. 9. Hot boric dressings, the dorsal splint, and flat rubber dam drains (never tubing), as used above, form an indispensable trio. 10. All cases treated as we have described recovered perfect function, excepting those few cases where necrosis of bone or tendon was present when the patient was first seen.

SURGERY, GYNECOLOGY, AND OBSTETRICS.

April, 1913.

Prostatectomy.—E. S. Judd advocates dividing the treatment into two stages: The first stage consists in relieving the patient of residual urine, and at the same time treating the cystitis, if it exists. In about three quarters of the cases a permanent catheter is introduced into the bladder through the urethra, and in the remaining quarter it is necessary to make a preliminary suprapubic stab drain. The second stage, the removal of the obstructing prostatic gland, is carried out after the urine has reached a normal specific gravity, following the initial fall. His technic is as follows: After emptying the bladder a long median incision is made and before an incision into the bladder is made the fundus is pulled well up into the abdominal wound, by stripping back the peritoneum, and the space around the bladder packed. With the gloved fingers of the right hand in the rectum, the gland can be pushed well up into the bladder, and the left index finger is now pushed through the prostatic urethra into the capsule of the gland. The enucleation should include the entire prostate gland, with the exception of the small piece lying in front of the prostatic urethra and the posterior lobe lying behind. When the gland has been completely enucleated, the capsule contracts quickly and the hemorrhage promptly ceases. As soon as the gland is shelled free from its capsule, and the urethra is torn off, the catheter which was introduced into the urethra before the operation was begun is passed through the prostatic capsule into the bladder, and irrigation commenced. Free irrigation is begun at once and the clots washed away. If the bleeding is too free, or the bladder is too badly infected, a rubber drainage tube, held by a pursestring suture in the upper angle of the wound, is inserted, and allowed to remain from twenty-four to forty-eight hours. The abdominal wound is sewed with silkworm sutures, and frequent urethral irrigations are continued until the suprapubic wound has healed, which takes place in from two to three weeks.

Postoperative Results in Amputation of the Cervix.—V. N. Leonard prepares an analysis of 128 cases of amputation of the cervix performed in the gynecological clinic of the Johns Hopkins Hospital, and draws the following conclusions: (1) Hemorrhage after amputation of the cervix is not uncommon (five per cent)., and may occur weeks after operation. (2) Cases of late postoperative hemorrhage are due to infection, rather than faulty suture of the cervix. (3) After amputation of a diseased cervix, ninety per cent. of the patients show noticeable improvement in general health. (4) Persistent leucorrhea of cervical origin is cured in sixty per cent. of the cases and improved in thirty per cent. of the cases. (5) About half the cases experience less menstrual pain after the operation. (6) Four fifths of the women remain sterile after the operation, yet in certain selected cases of persistent sterility amputation of the cervix seems to be the only practicable procedure. (7) This postoperative sterility is probably mechanical in origin, and may be due either to a narrowing of the external os through encroachment by the edges of the vaginal mucosa or to a stenosis of the cervical canal, consequent upon the irislike contraction of the cicatrix which invariably follows the operation. (8) A pregnancy following the amputation of the cervix has not more than an even chance of progressing to full term, in which event (9) serious dystocia due to cicacritial rigidity of the cervix will commonly be encountered. (10) Amputation of the cervix is the operation of choice in elderly women, but the procedure should be applied to those in the child bearing period only when more conservative methods of treatment, such as Hunner's linear cauterization or thorough curettage of the cervix, have failed.

Abderhalden's Biological Test for Pregnancy.—P. F. Williams and R. M. Pearce assert that the use of Abderhalden's test for pregnancy, employing the dialysis method and the ninhydrin color reaction, has given positive results with each of twenty-

eight sera from pregnant women and eight from women in the post partum period, including one after abortion, and that the test has never been negative in a known pregnancy. They have found the ninhydrin reaction far superior to the biuret reaction, and that Schleicher and Schull's smaller dialysis sacks should be used, rather than the fish skin membranes originally recommended. As a result of their studies, however, they feel that this test cannot be accepted as an accurate clinical method until it has been more thoroughly investigated and the possible sources of error corrected.

Proceedings of Societies.

THE MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Stated Meeting, February 17, 1913.

The President, Dr. Reynold Webb Wilcox, in the Chair.

Spinal Ankylosis for Pott's Disease.—Dr. A. Ernest Gallant reported a case, with photographs and skiagraphs, in which he had performed Hibbs' operation. The patient, a woman thirty-four years old, who was referred to him by Dr. John D. Trezise of Brooklyn, stated that she had had spinal deformity for two years, and the diseased process was found to involve three of the lower dorsal vertebræ. The operation was done by Doctor Gallant on October 5, 1912; after which she was kept in bed for a few weeks. All pain disappeared in four weeks, and there had been no return of it. After leaving bed she had worn a brace for a time, and was now using a suitable corset. The deformity, as well as her general condition, was greatly improved, and in December she wrote from her home in Pennsylvania that she had gained six pounds and was able to walk two miles. It had been found impossible, Doctor Gallant said, to get a radiograph which would show whether there was actual ossification at present.

Eyestrain.—This paper, by Dr. Isaac Hartshorne, was published in the Journal, May 10, 1913.

Clinical Indications for the Mastoid Operation.—This paper was by Dr. W. Sohier Bryant, who said that the history of the recent development in the diagnosis, prognosis, and treatment in mastoid surgery was marked by four brilliant achievements: The deductions from bacterial examination of the discharges, the use of the x ray in disclosing intraosseus conditions, the short convalescence, and the improved hearing after the operation. Formerly the accepted indications for mastoid operation were, symptoms of cranial and hemic complications, labyrinthine suppuration, fistula of the mastoid process, facial nerve or abducens nerve paralysis, fluctuation, edema or deep tenderness over the mastoid region, rise of temperature, and headache, all associated with middle ear suppuration and chronicity. At times there was difficulty in estimating the true importance of the various symptoms, and it often happened that cases which required immediate operation were delayed because of absence of some of the classical symptoms. Atypical cases with absence of any direct evidence of mastoiditis were either not diagnosticated until it was too late to save the patient's life, or a tedious recovery followed a delayed operation. Until comparatively recently mastoid operations were on principle deferred until softening of the bone had occurred; expectant treatment holding out the encouragement of convalescence without operation. Formerly also the prognosis of the results of the operation were most discouraging: Usually a slow, weary convalescence with many painful postoperative dressings and, what was worse, considerable impairment or even complete loss of hearing. It was no wonder, therefore, that the operation was delayed as long as possible. The present day indications for a mastoid operation included, in addition to the former ones, several definite elements of preeminent value in both diagnosis and prognosis. The most important of these indications were: 1. Rise of temperature unaccounted for and the toxic appearance of a patient suffering from inflammation of the middle ear or with a history of such inflammation; 2, the infallible indication of the presence of the *Streptococcus mucosæ* in the discharge, together with the determination of the morbidity of the mastoid, reinforced by the skiagram; 3, the demonstrations of a solid mastoid in the presence of middle ear suppuration. An observation of the greatest importance was that a mastoid infection due to *Streptococcus mucosæ* run a remarkably insidious course, with absence of objective symptoms and slight tendency to resolution. Like the bacterial differentiation, the skiagram was of especial value in cases which, without its use, might be overlooked. It had been observed that in normal temporal bones the interior structure of the mastoid varied considerably, grading from pneumatic cellular, through diploetic, to dense ivory, bone. Clinical observation showed that in pneumatic mastoids infection ended either by frank abscess formation or resolution, while in cases where diploetic or dense bone surrounded the mastoid antrum it tended rather to eventuation in chronic middle ear suppuration or to the development of serious intracranial or hemic complications. The skiagram also gave a differential diagnosis between middle ear suppuration complicated by otitis externa without mastoiditis and otitis externa with mastoiditis, and where both ears were affected it was useful in determining which ear demanded operation, or whether both ears should be operated upon. The means by which the time for operation was determined were the following: 1. The history of the case; 2, the condition of the ear as determined by inspection; 3, the presence of general sepsis; 4, symptoms indicating intracranial complications; 5, the formation of an abscess requiring surgical drainage; 6, a skiagram of the mastoid region; 7, the bacterial examination; 8, chronic middle ear suppuration not yielding to other treatment or with cholesteatomata; 9, acute suppuration of the middle ear unreasonably prolonged; 10, acute suppuration with the skiagram showing absence of the antral pneumatic cell system; 11, suppurating labyrinthitis. Recourse to the Röntgen ray cleared up a doubtful diagnosis, giving, in connection with the clinical symptoms, positive indications for or against operation. In pneumatic mastoid suppuration it was advisable to delay operation until the formation of abscess, while in the dense mastoid, suppurative mastoid inflammation was sufficient indication for operating at once. The prognosis following the mastoid operation, if the operation were delayed, was much the same as formerly, but cases operated on at the earliest crucial moment indicated gave a prognosis of speedy convalescence, absence of complications, and restoration of normal hearing.

The Combined Laboratory and X Ray Indications for the Mastoid Operation.—This paper was by Dr George Sloan Dixon, who said that for many years it had been the routine practice in the Eno Laboratory of the New York Eye and Ear Infirmary to examine smears for the aural canal of every patient with suppurative middle ear disease admitted to the wards. For a short time cultures were made, but these were soon abandoned, as the germs were always mixed and much time was wasted in separating them. As the mastoid pus in cases coming to operation was also examined, comparison showed that the predominating germ in the canal was found in the mastoid pus with sufficient frequency to make it a good rule to regard the predominating germ in the discharge from the middle ear responsible for the mastoid involvement. In 5,496 examinations of aural pus made during the past eleven years, 26.6 per cent. had been mixed infection. A large number of germs were present, and it was not advisable to charge the infection to any particular one. The majority of these cases were chronic, and where a radical mastoid operation was done the smear usually showed mixed germs. Streptococcus occurred as the predominating germ in 24.8 per cent.; staphylococcus (aureus and albus), 7.4 per cent.; *Streptococcus mucosus capsulatus*, 4.8 per cent.; spirillum of Vincent, 1.8 per cent. The remaining 22.4 per cent. were represented by miscellaneous, negative, etc.; among which were the pneumococcus and tubercle bacillus. In the matter of the relative virulence of the various microorganisms in acute suppurative processes about the middle ear Doctor Dixon's experience had led him to regard the *Streptococcus mucosus capsulatus* as standing first, *Streptococcus pyogenes* next, pneumococcus third, and staphylococcus fourth. He desired to reiterate, with special emphasis, a statement he had made

a number of times, namely, that among the microorganisms found in the middle ear the *Streptococcus mucosus capsulatus* in a manner stood alone; being the most insidious and destructive the otologist had to combat. Cases of this character demanded at least an exploratory mastoid operation. As a rule, every day over two weeks' duration was an additional and increasing menace to the life of the patient. To illustrate the force of this statement he gave brief histories of six cases ending fatally which had been picked at random. While other forms of infection might be equally dangerous, in them there was little likelihood of such a complete cessation of symptoms, and the danger signals were quite constant. In cholesteatoma the finding of cholesterin crystals in specimens from the canal or attic might aid in the diagnosis. The microorganisms found in this condition were not likely to be of much importance. In mastoiditis the blood count might be an excellent indication of the resistance of the patient or the onset of complications, but gave little information as to the condition of the mastoid itself. In blood cultures we had an excellent means of determining whether the patient was suffering from bacteremia or not, and a positive culture in the presence of middle ear suppuration might be regarded as evidence of thrombosis of the lateral sinus, provided that all complications of a suppurative nature below the neck could be eliminated.

If any advantage was to be derived from mastoid radiography, some knowledge of the variations met with in the normal mastoid process was, of course, necessary. Having made some reference to these, he said it might very properly be asked what we might reasonably expect to be obtained in the way of information from an x ray examination of the mastoid. First, it would show, in the vast majority of instances, the location of the lateral sinus, judged by the shadow of the anterior margin of the groove in its relation to the meatus and its angle to Reid's base line—which was most important. (Illustrative cases cited.) Second, we could learn the type of bone, the location of the large cells, whether the sinus was covered with cells or not, and the extent to which they had developed into the zygomatic region. If cells did not show on the diseased side, and did show on the normal side, the chances were about three to one that the pathological bone was of the same type. If no detail were found in the plate of the affected side, the chances were about five to one that the mastoid was diseased; though the clinical symptoms must back up the plate. (Cases cited.) Third, it was possible to diagnosticate perisinus abscess occasionally. More experience and improved technic should increase the number discovered. Epidural abscess, if it were not in line with the sinus, should be diagnosticated at least in a small proportion of instances. (Cases cited.) Fourth, fractures of the mastoid process could be shown, but not invariably. Stereograms would aid in these cases. Fifth, faults in the canal wall and tegmen tympani and antri might be shown. Furunculosis of the canal frequently gave marked symptoms, and in the vast majority of cases the diagnosis could be cleared up by an x ray examination. (Cases cited.) It could not be gainsaid that x ray examination of the mastoid was of great value. Ordinary common sense must be used in reading the plates, and the findings should be supported by the clinical symptoms. Where the latter alone were not sufficient for a diagnosis of mastoiditis, a positive plate would often supply conclusive evidence for immediate operation. Anything which would add to our knowledge would increase the chances of the patient's speedy recovery. The clinical symptoms were all important; without them our modern aids were of little value. We might have a rather violent streptococcus infection in the canal, or a pneumococcus infection which looked vicious in the smear, recover after myringotomy, even though there might have been considerable mastoid tenderness; and a *Streptococcus mucosus* otitis media might eventuate in the same way. Not infrequently, however, the clinical symptoms in this form of infection were not sufficient to warrant surgical intervention. When the acute stage had passed away we might have none, and the blood count might be normal. Only the otorrhea remained, and possibly even this might have ceased. If in these cases further clinical symptoms were waited for, the chances were greatly in favor of their indicating meningitis or sinus thrombosis when they did arrive, instead of a simple acute mastoiditis. A positive x ray plate in such a case, taken in connection with the form of infection, settled the diagnosis and made the mastoid operation, with as little delay as possible, imperative. Staphylococcus infections seemed to allow more latitude than any of the others, but even these would give plenty of trouble if the drainage was poor. A certain number of cases were met with in which symptoms of sinus thrombosis was the first indication that the time for operative interference had arrived. Here a positive blood culture would, of course, settle the diagnosis, provided that other sources of infection of the blood stream could be eliminated. In these cases the differential blood count was variable, and could not be regarded as affording any very positive assistance; but a large leucocyte count and a high polynuclear proportion were suspicious.

Dr. Gorham Bacon said that for a good many years he had worked with much satisfaction with Doctor Dixon in this class of cases. It was of very great value to know the nature of the infection, not only in one ear, but in both. In certain instances there was a mixed infection on one side and a very virulent infection on the other. The fact of such virulent infection indicated that the real trouble with which we had to deal was probably on the side where this was found. Hence, the laboratory findings helped very much in this class of cases. On the other hand, we might have sinus thrombosis with negative blood cultures, and with a positive blood culture fail to find a thrombus in the sinus; and we had, therefore, to rely more on the clinical indications than those furnished by the laboratory. The clinical were the most important, though the others undoubtedly helped out.

Dr. Edward B. Dench said that as to the effects upon the hearing, if the operation were done early this was seldom impaired, and his experience was that patients heard as well after the operation as before. This was an argument for operating early, and it should be borne in mind that the simple mastoid operation, if done sufficiently early, was not a dangerous procedure. As to infection by the *Streptococcus mucosus capsulatus*, during one winter he had thirteen cases of this, most of them in private practice, and out of these only two came to a mastoid operation. Still, notwithstanding this experience, he agreed that this microorganism was the most dangerous we had to deal with. He would say, however, that a case of such infection was not dangerous provided that it was drained early. But the patient should be watched very carefully for a long time, for one never could tell when serious trouble might suddenly develop, even though the patient was apparently in perfect health.

Dr. T. Passmore Berens said that of the fourteen cases of mastoiditis radiographed by Doctor Law of the Manhattan Eye, Ear, and Throat Hospital during the past two weeks, as they presented themselves at his (Doctor Berens') clinic, his reading of the plates in every instance was confirmed on operation. Doctor Dixon's x ray and other work was convincing, and could not be too highly praised, and he wished to congratulate Doctor Bryant on his able handling of his subject. He agreed with the latter as to the indications for operation, but thought he had not sufficiently emphasized the fact that there was a class of cases with practically no subjective symptoms which had been called "latent mastoiditis." Latent mastoiditis had, in many instances, simply a discharge from the middle ear, and this was frequently the only symptom on which we had to work—often there was no pain on pressure, no edema, no demonstrable sagging of the walls of the external canal; the blood count might be normal; fever was absent, and the patient might claim complete freedom from other discomfort—and yet the mastoid might be necrotic and full of pus. There was still another class of cases in which the drum membrane might be intact, with but little if any redness in it, and there might be simply vague pains referred to the ear and to that side of the head. Even here the blood count might be normal and fever lacking, and yet the mastoid might be full of pus, while operation might uncover a pernicious abscess. Doctor Bryant had not emphasized at all too strongly the importance of early operation in cases of *Streptococcus mucosæ*, but it was well to remember that even the comparatively innocent staphylococcus might invade the meninges and cause death.

Dr. Charles E. Perkins said he thought that as time went on we would rely more and more upon the x ray examination to aid us in the diagnosis of doubtful cases. Some two years ago he had reported four cases of mas-

toiditis without apparent involvement of the middle ear. One of these patients had had a swelling behind the ear for about three months. The fundus of the canal and membrana tympani were normal. At operation a large perisinus abscess was found. The infection in this instance was the *Streptococcus mucosus capsulatus*. In another case, which he had seen just before death, the fundus was normal, but at the autopsy mastoiditis, sinus thrombosis, and meningitis were found. In this case an x ray examination early in the course of the disease would doubtless have cleared uo the diagnosis and perhaps saved the patient.

Dr. James F. McKernon said that the importance of the evidence afforded by bacteriological investigation in this class of cases was now generally recognized. Yet when he had asserted this in 1896 it was received with laughter by the surgeons of the New York Eye and Ear Infirmary. He had waited to hear Doctor Bryant say something about the atypical cases. The typical cases were easy of recognition, but those on the border line were more difficult. There might be no tenderness over the mastoid, but there were two significant signs. The first was a marked diminution in audition on the affected side, and the second was that when a speculum was inserted there was found a general narrowing of the lumen of the canal, though most marked as regards the superior wall. In addition, the appearance of the tongue would indicate the presence of an infection. Again, in children the development of serious trouble was sometimes very late. There might be nothing to attract attention but a continuous discharge, but the quantity of this would show that it came from a reservoir of greater capacity than the middle ear. He then went on to say that while the blood examination and x ray were undoubtedly of great confirmatory value, he would refuse to operate in any case in which he had to depend upon the evidence afforded by these alone.

Dr. Joseph A. Kenefick said that he, too, would emphasize the atypical cases as of the greatest importance to the general practitioner. Headache was a sign which ought not to be disregarded, and especially headache at night. Tension was a necessary result of mastoiditis, and this, naturally, was relieved to some extent when the patient was in the upright position, but continuous when he was in the recumbent posture. In mastoid disease the sooner one operated, the better. In the matter of diagnosis, in relation to the type of infection present, he personally depended upon the findings by Doctor Dixon. Mastoiditis often could be nipped in the bud, in infection of any type, and in every instance it was essential that the drum membrane should early be slit from top to bottom.

Dr. Arthur B. Duel said that all seemed now to agree as to the value of smears. This was not formerly the case, as it was asserted by many that only cultures could be of importance. For many years it had been his invariable practice to make smears from the ear, and he had come to look upon the findings as of prognostic value. Doctor Dixon's work had been of great value. As to infection by the *Streptoccocus mucosus capsulatus*, we should not be deceived into inaction by the fact that nothing very serious developed, if the discharge continued. These cases ought to be operated on precisely because the capsulatus was there, when the discharge continued for more than a fortnight; owing to the fact that tremendous destruction often occurred with no warning symptoms until intracranial structures were involved. The pneumococcus would produce high temperature, as it did in pneumonia, and this was likely to subside by crisis, without giving rise to mastoiditis. He believed the x ray would prove to be of incalculable value in diagnosis as experience with it increased.

The Results of Tonsillectomy.—Dr. Bryan DeForest Sheedy read this paper. Not all physicians, he said, had done tonsillectomies, to the exclusion of the old time tonsillotomy operation, and those who had done tonsillectomies might not have observed the results of their work months after the operation. The results of the modern operation, so far as removing pathological tonsils was concerned, were, he believed, very much better than those from the old tonsillotomy procedure, and though we had many physical throat defects following it, the constitutional benefits derived from it were far greater and outweighed such drawbacks. He was convinced, however, that some at least of these throat defects were due to the present customary method of removing the gland.

In tonsillectomy the aim had been to remove the gland with its capsule intact, and this had been accomplished either, 1, by seizing the tonsil with the forceps and pulling the whole gland from its bed, and then with sharp knives dissecting away the mucous membrane and cellular tissue; 2, by bluntly dissecting with the finger, thereby tearing through these structures; 3, by extracting the tonsil from its bed, incising through the mucous membrane, and then passing the snare outside, thus removing the whole tonsil; or 4, by the Sluder operation. Of a series of fifty patients, from fourteen to forty years old, examined from two to three months after tonsillectomy by some one of these procedures, Doctor Sheedy found deformed throats in more than eighty per cent., while not more than twenty per cent. had throats approaching the normal. Of the forty patients wifh abnormal conditions, seventeen complained of speech defects for two or three weeks, eight complained of speech and voice defects two months after operation, and two had practically lost the singing voice, while thirteen said they could speak better, and that their throats felt better than before the operation. About five per cent. complained of difficulty in using certain words and had nasal intonation. The deformities following enucleation seemed to be of three varieties: 1. The pillars on both sides had apparently disappeared, leaving a flattened surface where the tonsil had been and a much narrowed opening into the nasopharynx; 2, the pillars on both sides seemed to have grown together, so that there was but one pillar, with the uvula pulled to one side; 3, the anterior pillar had wholly disappeared, while a large amount of cicatricial tissue was deposited on the surface of the posterior pillar, altering its shape and function. In some of the cases the soft palate and uvula were pulled down to a much lower position than normal, thus accounting for the nasal intonation complained of by some of the patients. The question therefore arose how to enucleate the tonsil without incurring unsatisfactory afterresults. As a means to this end he had for some time been removing tonsils by a procedure which he had not seen described in the books. In adult patients he cocainized the surface of the tonsil with a ten per cent. solution of cocaine, after which he injected into the cellular tissue surrounding the capsule a one and one half per cent. solution of quinine bisulphate, making the operation absolutely painless. In young children he employed general anesthesia with ether. With a tonsil tenaculum inserted as far as possible into the centre of the gland, avoiding the capsule, he took hold of the bands of tissue extending from one side to the other and endeavored to invert the tonsil, just as one might invert the uterus by pulling on a retained placenta. Where the capsule was not too much contracted, the gland had not become a solid mass of hypertrophied tissue, or the capsule was not everywhere bound down by bands of tissue left from old abscesses, on slight traction the tonsil would completely invert, and after the inversion he passed a snare about it. By tightening the snare slowly the tonsil was removed without injury to the muscles and without hemorrhage. During the past two years he had employed this method in a very large number of cases, and had yet to meet with one where deformity had followed the procedure. From this experience, therefore, he was convinced that in cases to which it was adapted this operation surpassed any hitherto known for the removal of tonsils.

Dr. Frank C. Raynor said that for a great many years he had done tonsillectomy practically exclusively. He had had some of the deformities mentioned in the paper, but almost always an essentially normal throat afterward. When the tonsil ran very high up there was a greater risk of some deformity. He had met with no marked impairment of function, though it was difficult to follow up hospital cases. Most of his operations had been in children, and in this class of patients, on account of the gagging and other trouble caused, local anesthesia was not practicable. In practically all his cases he had employed general anesthesia, and this he thought preferable on account of the comfort of both operator and patient. He had been much interested in Doctor Sheedy's description of his method, and would certainly give it a trial.

Dr. William K. Simpson said that the question of tonsillotomy versus tonsillectomy was an old and vexed one.

There was no doubt in his mind, however, that a good tonsillotomy was better than a bad tonsillectomy. In skilful hands the old operation could in many instances be done as effectively as so called tonsillectomy. It was certainly a matter of wonder why tonsillectomy had not always been the one operation, and the most probable explanation was that something must have happened to throw discredit upon the procedure. We now had a great variety of methods for removing the tonsils, and it seemed that we ought to fix upon some simple, uniform way of doing this. There were one or two operations which appeared to work satisfactorily. One of these at present claiming considerable attention was the Sluder operation, and now we had another in the procedure described by Doctor Sheedy. The complete removal of the tonsil, i. e., tonsillectomy, should be done exceedingly carefully and in a manner which should reduce to a minimum the subsequent palatine deformities.

Dr. J. ALEXANDER McISAAC said that both in children and adults he never did a tonsillectomy except under general anesthesia, so that he could have complete control of his patient. In his experience, where a tonsil caused trouble from inflammation and disease, he found that it was very adherent to the surrounding tissues. Therefore, the best technic was the one that caused the least possible trauma when removing it. He had found that the best method was to dissect carefully both the anterior and posterior pillars away from the adherent capsule. Following this further, he dissected the capsule from the superior constrictor muscle, and in doing this he directed pressure against the capsule of the tonsil. Then he used the wire snare to complete the operation He had had no experience with the method described by Doctor Sheedy in his excellent paper. In the hands of another physician he had seen a secondary hemorrhage follow the use of the snare where the dissection had not been done.

Doctor SHEEDY, in closing, said that Doctor Simpson's remarks applied more particularly to children. The cases to which he had referred in his paper were wholly in adults. With the exception of one or two instances, in a very large number of cases, he had not seen unsatisfactory results in children when the operation was carefully and properly performed. In the various cutting and dissecting operations they necessarily had cicatricial tissue, and from this there naturally followed the contractions resulting in the abnormal conditions, especially of the pillars, of which he had spoken. There could be no question that tonsillectomy, as heretofore performed, was a major operation, and one that should always be done in a hospital, where proper assistance and appliances were ready at hand and where the patient could lie up for a day or two and have proper aftercare. The Sluder method was intended to do away with the difficulties associated with the work as now performed, but injury to the anterior pillar was almost inevitable under this procedure. The eversion operation, as he had described it this evening, was so simple a surgical procedure that any man with any surgical experience could do the work with safety, and if the snare were tightened slowly there would be no afterhemorrhage with which to deal. This statement applied to the operation in children as well as adults, and whether the operation were done under a local or a general anesthetic.

Letters to the Editor.

APPARATUS FOR THE INTRAVENOUS USE OF NEOSALVARSAN.

24 WEST SIXTIETH STREET, NEW YORK, *May 20, 1913.*

To the Editor:

The article you publish in the issue of May 17, 1913, written by Dr. O. L. Suggett, entitled "A New Simple Apparatus for Its Use" (Neosalvarsan) describes an apparatus almost identical with the apparatus devised by me over two years ago, the description of which was published in the JOURNAL of February 11, 1911. There is practically no difference except the use by Doctor Suggett of the Erlenmeyer flask, instead of the Jena flask.

EDWARD F. KILBANE, M. D.

DEAFNESS AND ITS PREVENTION AND TREATMENT.

AKRON, OHIO, *May 30, 1913.*

To the Editor:

I desire to express my gratitude to you for the general excellence of your JOURNAL and especially for those articles in the issue of May 24th by Kopetzky, Maloney, and Ballin, on the ear and its disturbances.

These I have reread with growing interest and profit.

While I am in general practice, I am intensely interested in a search for relief for the vast army of the more or less deaf. Their complaints hurt the cause of legitimate, rational medicine, and promote therapeutic nihilism in the minds of the laity and justifying it to them as they detect it in our profession. Ballin emphasizes the extreme vulnerability of the auditory nerve; Kopetzky's lucidity in the description of the anatomy and physiology of the auditory apparatus is charming and helpful, while Maloney's advice as to the training of the sense of hearing is most excellent and cheering.

Contrast the mighty works of the immortals in medical history with their limited resources, scant information, and small libraries, with the modern graduate, floated on a flood of literature, drenched with advice, overwhelmed with aids, and yet gradually isolating himself from their good influence, narrowing his own horizon, and chasing the elusive dollar. To counteract this and exalt the standing of the profession in the mind of the masses, preventive measures should be boldly and freely advocated to the whole community. The care of the ears, the dangers of cold water (as in diving), the importance of protection, of diet, the insidious approach of eustachian infection, reaction, swelling, occlusion; leading to mid ear infection, drum fixation, ossicular anchylosis, stampedic motor limitation—all are subjects suitable for popular instruction.

Mrs. K. had eustachian obstructive deafness in right ear six years, and in left ear one year. Life became burdensome; and after a few treatments during six months by an excellent aurist in vain she was treated by means of the Oudin current, applied by insulated electrode to the pharyngeal orifice of the eustachian tube, the external meatus being connected to a grounding wire. Three séances restored hearing, and she decided to postpone her contemplated suicide.

I have a number of chronic cases, hoping they may one day hear the sirens calling. In addition to common agents I employ the high frequency, slow and rapid sinusoidal currents, the faradic and galvanic currents, the effleuve and x ray flashes, in suitable cases. Surely the dismal problem of ages demands solution. Ears to hear were never more urgently required nor more essential to success in life. So I welcome, as you do, any light which may be shed upon this difficult problem, banishing narrowness of view and practice, hoping, struggling, reading, learning.

All honor to those who lend a hand in the doubtful battle.

I thank you for your scientific attainments, high ideals, faithful efforts, and excellent results.

Every doctor should attend regularly his local medical society's meeting. I believe a large part of the profession needs prodding.

S. ST.J. WRIGHT.

Book Reviews.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

A Textbook of Physiology. By ISAAC OTT, A. M., M. D., Professor of Physiology in the Medico-Chirurgical College of Philadelphia, Consulting Neurologist, Norristown Asylum, Pa., etc. Fourth Edition, Revised and Enlarged. Illustrated with 434 Half Tone and Other Engravings, Many in Colors. Philadelphia: F. A. Davis Company, 1913. Pp. xvi-911. (Price, $3.50.)

In this, the fourth edition, the following changes have

been made: Several old cuts have been removed and twenty-four new ones inserted. Twenty more pages have been added. Plates showing the movements of the stomach and intestines in man by the Roentgenkinematograph have been given and described according to the latest observations of the Munich school. These cuts have not appeared in any English textbook of physiology. The chapter upon Internal Secretions has been rewritten to a large extent. The pineal gland and the gonads have been considered. The correlation of the ductless glands has been explained according to the recent experiments upon this subject. A description of the string galvanometer has been given. Electrocardiograms of the normal heart and of the heart in Stokes-Adams disease have been described. The centres of localization of motion in the cerebellar cortex have been indicated. The new test of Abderhalden's for pregnancy has been explained. The increase of cholesterin in pregnancy has been noted. The researches from the Medico-Chirurgical Laboratory upon the exciting, inhibiting, and synergistic hormones of the milk secretion have been incorporated. The latest facts in physiology have been recognized.

Diabetes: Its Pathological Physiology. By JOHN J. R. MACLEOD, M. B., Ch. B., D. P. H., Professor of Physiology, Western Reserve University, Cleveland, Late Demonstrator of Physiology London Hospital. London: Edward Arnold; New York: Longmans, Green & Co., 1913. Pp. xi-224. (Price, $3.)

The subject matter of this valuable volume formed the theme of a series of eight lectures delivered during the summer session of 1912 in the Physiological Laboratory of the University of London. As summarized by its author, its purpose is as follows: It is believed by those who have had extensive clinical experience that every person who has a low tolerance toward carbohydrates is to be considered as a mild case of diabetes, even although he may be otherwise in perfect health. The condition, left untreated, may, or may not, develop into the acute disease, but it seems to be an established fact that the tendency to do so can be greatly minimized by appropriate dietary control, by which also the risk of complications is much lessened. To apply this prophylactic treatment successfully no empirical rule for all cases can be laid down. It is necessary that each case be treated as a problem in itself, and that it be frequently examined, and the diet adjusted so as to meet its peculiar requirements. The physicians who have had most success with such cases are those who, by close attention to the reults of experimental investigations, have a thorough knowledge of the physiological processes that become upset in the disease. Many of these physicians have themselves taken part in the experimental work. It is for those who cannot find time to do this that the work is intended. The author has admirably succeeded in carrying out his aim, the book being filled with eminently practical facts.

The Treatment of Infantile Paralysis. By OSKAR VULPIUS, M. D., Professor Extraordinary at the University of Heidelberg. Translated by Alan H. Todd, M. B., B. S., B. Sc., House Surgeon Guy's Hospital, etc. With an Introduction by J. Jackson Clarke, M. B., F. R. C. S. New York: William Wood & Co., 1912. Pp. x-318. (Price, $4.)

Recent additions to our knowledge of acute poliomyelitis, especially concerning the etiology, pathology, and clinical study of the acute stages, have flooded medical literature for several years. At the same time, advances have been made along the line of orthopedic treatment of the sequelæ of this disease, although of a less revolutionary character. It is from the latter standpoint that the present work is developed, reviewing the entire subject and drawing upon the very extensive experience of the author. After a brief and rather superficial consideration of the etiology, symptomatology, and pathology of the disease, the main features of the book are set forth, and these are divided into two parts The first deals with general therapeutic measures, as well as treatment of the acute stage and the stage of repair during the first year of illness; the second, or special, part comprises descriptions of the paralyses of the various parts of the body, together with their surgical and orthopedic correction. The text is generously illustrated, especially as regards the various types of deformity and the forms of corrective apparatus. The translation is excellent, having scarcely a trace of the German construction, and the work as a whole is to be recommended as a valuable contribution in a hitherto somewhat neglected field.

Travaux sur la nouvelle bactérologie de la tuberkulose, dans ses rapports avec l'hygiene et la thérapeutique spécifiques de cette maladie. Par J. FERRÁN. Barcelone: La Renaixensa, 1913. Pp. 175.

In this publication consisting of several articles Ferrán sets out to prove that the bacillus of Koch with its acid fast characteristics is derived from a nonacid fast organism which he has discovered. He devotes some thirty pages to a discussion of what he considers erroneous views concerning tuberculosis and its origin. The conclusions drawn are at some variance with the generally accepted ideas. To begin with, these readily grown, nonacid fast bacilli have been recovered from the sputum, pus, and the involved tissues. They are able to cause tuberculosis if an inflammatory condition has preceded. These organisms when spontaneously or artificially attentuated are well tolerated by human beings and susceptible animals. For that reason they are excellent antigens for the purpose of giving rise to immune antibodies. In another article Ferrán devotes fifty pages to a discussion of the new bacteriology of tuberculosis and to descriptions of his newly discovered bacilli. The author generously offers to send cultures of these bacteria to those who would like to confirm the work reported.

Golden Rules of Gynecology. Aphorisms, Observations, and Precepts on the Proper Diagnosis and Treatment of Diseases of Women By GEORGE B. NORBERG, M. D., Kansas City, Mo., Professor of Diseases of Women and Clinical Gynecology, University Medical College, Gynecologist to the Kansas City General Hospital, etc St. Louis: C. V. Mosby Company 1913. Pp. 253. (Price, $2.25.)

In the 250 pages of this book, under the title of "Golden Rules," a guide is furnished the practitioner, the rules of which, if observed and applied, will be important factors in getting results in this particular branch of medicine. A book of this sort is needed, since it contains what the title claims for it, and may be advantageously used as a ready reference work. It does not, in any sense, displace the textbook on gynecology, but it eliminates many of the details necessary in a textbook on the subject; also that which belongs to general surgery. The volume is convenient in size, is convincingly written, and contains that which every physician who treats diseases of women should be familiar with.

Meetings of Local Medical Societies.

MONDAY, *June 9th.*—Society of Medical Jurisprudence New York; Williamsburgh Medical Society, Brooklyn; New Rochelle Medical Society; Corning Medical Association; Waterbury, Conn., Medical Association.

TUESDAY, *June 10th.*—Medical Society of the County of Schenectady, N. Y.; Medical Society of the County of Rensselaer, N. Y.; Buffalo Academy of Medicine; Jamestown Medical Society; Rome, N. Y., Medical Society; Practitioners' Club of Jersey City, N. J.

WEDNESDAY, *June 11th.*—Medical Society of the Borough of the Bronx; Brooklyn Medical and Pharmaceutical Association; Richmond County Medical Society; Dunkirk and Fredonia Medical Association (semi-annual); Alumni Association of the Norwegian Hospital, Brooklyn.

THURSDAY, *June 12th.*—West Side Clinical Society; Brooklyn Pathological Society; Blackwell Medical Society of Rochester (annual); Auburn City Medical Society (annual); Society of Physicians of the Village of Canandaigua; Gloversville and Johnstown Medical and Surgical Association; Physicians' Club of Middletown.

FRIDAY, *June 13th.*—Eastern Medical Society of the City of New York.

Official News.

United States Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending May 28, 1913:

Carter, H. R., Senior Surgeon. Detailed to proceed to Minneapolis, and such other places in Minnesota as may be necessary, to deliver addresses on public health. **Gammon,** W. H., Acting Assistant Surgeon. Granted thirty days' leave of absence, without pay, from May 29, 1913. **Guthrie,** M. C., Passed Assistant Surgeon. Relieved from duty at Ellis Island, N. Y., and directed to proceed to Southport, N. C., and assume temporary charge of the Cape Fear quarantine station. **McKeon** F. H., Passed Assistant Surgeon. Relieved from duty at the Marine Hospital, San Francisco, Cal., and directed to proceed to Fort Stanton, New Mexico, and report to the medical officer in charge for duty and assignment to quarters. **Ridlon,** J. R., Passed Assistant Surgeon. Granted one month's leave of absence, from June 23, 1913. **Scott,** E. W., Assistant Surgeon. Directed to proceed to Halifax, Nova Scotia, and report to the commanding officer of the Revenue Cutter *Miami* for temporary duty. **Slamberg,** N. L. A. K., Acting Assistant Surgeon. Granted thirty days' leave of absence from May 25, 1913. **Warner,** H. J., Passed Assistant Surgeon. Relieved from duty at the Revenue Cutter School of Instruction, Fort Trumbull, Conn., and directed to proceed to Washington, D. C., and report to the Director of the Hygienic Laboratory for temporary duty. **Wertenbaker,** C. P., Surgeon. Detailed to attend the eighteenth annual meeting of the Association of Surgeons of the Southern Railway Company, at Old Point Comfort, Va.

United States Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending May 31, 1913:

Appel, D. M., Colonel. Arrived in Honolulu, Hawaii, on May 14th, for duty as department surgeon, relieving Lieutenant Colonel H. I. Raymond. **Bradley,** A. E., Lieutenant Colonel. Granted five days' leave of absence. **Brown,** I. C., First Lieutenant, Medical Reserve Corps. Will be assigned as transport surgeon on the *Dix* durin the trip on or about June 7, 1913, to the Philippine Islands. **Byrne,** J. G., First Lieutenant, Medical Reserve Corps. Has been ordered to active duty and will proceed to Fort Lawton, Wash., and report to the medical superintendent of the Army Transport Service for Puget Sound, for assignment to duty on the transport *Dix*. **Ferenbaugh,** T. L., First Lieutenant. Left on May 24th for station at Fort Sill, Okla. **Frick,** Euclid B., Lieutenant Colonel. Relieved from duty at the Presidio of San Francisco, as chief surgeon of the third division, and from duty in the office of the chief surgeon of the Western Department, on or about June 30, 1913, and will assume command of the Letterman General Hospital, Presidio of San Francisco, Cal. **Guinan,** Edward R., First Lieutenant, Medical Reserve Corps. Relieved from duty at the Army Medical School, and will proceed to his home, where he will be relieved from active duty in the Medical Reserve Corps. **Haines,** E. F., First Lieutenant, Medical Reserve Corps Arrived at Fort Leavenworth, Kansas, on May 22d, for duty. **Huggins,** J. B., Captain. Arrived at Fort Robinson, Neb., on May 23d, for duty. **Hutton,** P. C., Major. Will proceed at the proper time to Gettysburg, Pa., for duty as sanitary officer of the Gettysburg encampment. **Kendall,** William P., Lieutenant Colonel. Relieved from duty at Fort Riley, Kansas, and will at the proper time proceed to San Francisco, Cal., and will report to the commanding general of the Western Department on or about June 30, 1913, for assignment to duty as chief surgeon of the Third Division, and sanitary inspector of the Western Department. **Kinsey,** Oliver, Jr., First Lieutenant, Medical Reserve Corps. Relieved from duty at the Army Medical School, and will proceed to Fort Washington, Md., and report to the commanding officer of that post for duty. **Lynch,** Charles, Major. Has been granted four months' leave of absence, on or about June 15th. **Page,** Henry, Major. Left Army Service Schools, Fort Leavenworth, Kansas, on May 23d, for Walter Reed General Hospital, for observation and treatment. **Reynolds,** C. R., Major. Left Washington Barracks, Washington, D. C., on May 24th for duty with militia camp, Staunton, Va., and arrived on May 25th. **Saurman,** John S., First Lieutenant, Medical Reserve Corps. Has resigned his commission in the Medical Reserve Corps, and it has been accepted by the President, to take effect June 2, 1913. **Shook,** J. R., Major. Left Army Service School, Fort Leavenworth, Kansas, for Fort Logan, Colo. **Strong,** Francis X., First Lieutenant. Will report to the commanding general of the Western Department for temporary duty, pending the sailing of the transport for Manila, on or about June 20, 1913. **Tarleton,** L. O., First Lieutenant. Ordered to Benecia Arsenal from Vancouver Barracks, for duty during the absence of First Lieutenant Elsworth Wilson, who is on sick leave **Wilber,** Leon M., First Lieutenant, Medical Reserve Corps. Relieved from duty at the Army Medical School, Washington, D. C., and will proceed to his home and report his arrival by telegraph to the adjutant general of the Army and will be relieved from active duty in the Medical Reserve Corps.

United States Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending May 31, 1913:

Allen, D. G., Passed Assistant Surgeon. Commissioned a passed assistant surgeon in the navy from October 3, 1911. **Cather,** D. C., Passed Assistant Surgeon. Ordered to the Naval Hospital, Philadelphia, Pa. **Furlong,** F. M., Surgeon. Detached from the Navy Yard, Washington, D. C., and ordered to the *New Jersey*. **Hoyt,** R. E., Surgeon. Ordered to the Atlantic Reserve Fleet. **Neilson,** J. L., Surgeon. Detached from the Bureau of Medicine and Surgery, Navy Department, Washington, D. C., on June 3, 1913, and ordered to the *Illinois*. **Noland,** Lloyd, Assistant Surgeon, Medical Reserve Corps. Commissioned an assistant surgeon in the Medical Reserve Corps from April 16, 1913. **Rosenau,** M. J., Assistant Surgeon, Medical Reserve Corps. Commissioned an assistant surgeon in the Medical Reserve Corps from March 28, 1913.

Births, Marriages, and Deaths.

Married.

Cobb—Nagle.—In Boston, Mass., on Wednesday, May 28th, Dr. Frederic Codman Cobb and Dr. Evelyn W. Nagle.

Died.

Baker.—In Rochester, N. Y., on Tuesday, May 27th, Dr. Samuel B. Baker, aged forty-three years. **Belknap.**—In Mayville, N. Y., on Tuesday, May 27th, Dr. Milton C. Belknap, aged seventy years. **Brown.**—In Trenton, N. J., on Sunday, May 18th, Dr. Wade Hampton Brown, aged sixty-six years. **Francis.**—In Washington, D. C., on Friday, May 23rd, Dr. John R. Francis, Sr., aged fifty-seven years. **Gottschalk.**—In Chicago, on Thursday, May 22nd, Dr. F. B. Gottschalk, aged forty-five years. **Hoffman.**—In Cambellsport, Wis., on Sunday, May 18th, Dr. M. A. T. Hoffman, aged thirty-four years. **Hoyt.**—In Newark, N. J., on Monday, May 26th, Dr. Eugene F. Hoyt, of New York, aged sixty-six years. **Leland.**—In Brooklyn, N. Y., on Thursday, May 20th, Dr. Matthew J. Leland, aged sixty-two years. **Magee.**—In Lawrence, Mass., on Friday, May 23rd, Dr. John A. Magee, aged sixty-five years. **Richards.**—In Palmyra, N. Y., on Wednesday, May 21st, Dr. John Richards, of Marion, N. Y., aged eighty years. **Thompson.**—In Newport, R. I., on Friday, May 30th, Assistant Surgeon Frank William Thompson, United States Navy. **White.**—In Fort Wayne, Ind., on Monday, May 19th, Dr. Robert Parks White, aged fifty-three years.

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Original Communications.

GONORRHEA FROM A PATHOLOGICAL STANDPOINT.*

BY GEORGE A. WYETH, M. D.,

New York,

Assistant, Genitourinary Department, New York Polyclinic Medical School and Hospital.

Before going into the pathology and treatment of gonorrhea I wish to review hurriedly the histo-anatomy of the parts chiefly involved and point out a few of the anatomical obstacles met in treating this most prevalent, yet most neglected of all diseases. As you recollect, the male urethra is divided into the anterior and posterior portions by the anterior layer of the triangular ligament. The anterior portion is divided again into the fossa navicularis, the penile, and the bulbous portions. The posterior portion is divided into the membranous and prostatic. The urethra, it will be recalled, is not a tube of uniform calibre throughout, but varies greatly in its diameters throughout its course, so that when an instrument, such as a sound, is introduced, pressure is not equally exerted on all its surfaces.

The first point of physiological narrowing is the meatus, behind which it broadens out into the fossa navicularis, to again become constricted posteriorly. It then gradually increases in diameter as it extends backward until it reaches its larger dimension in the bulb. Next piercing the two layers of the triangular ligament, it becomes surrounded by the compressor urethræ muscle. Here it has its narrowest and most fixed portion, beyond which it again broadens and is surrounded by the prostate. This is well illustrated by the cross sections of the normal urethra, shown in Fig. 1. Besides the changes in the size and shape of the urethra, I would call attention to the many folds and pockets of the mucous membrane and the numerous simple and compound racemose glands, the latter often extending into the depths of the corpus spongiosum. This is nicely shown in the two photomicrographs of slides 3 and 6 (Figs. 2 and 3).

Figure 4 shows section of a normal prostate of a man of twenty-seven years. The prostate, as you know, is made up of from thirty to fifty individual alveotubular glands surrounded by smooth and striped muscle enclosed in a fibrous capsule. Here we see the acini lined by cylindrical epithelium and containing a few amyloid bodies.

Figure 5 is a section of the seminal vesicle of the same individual and shows nicely the labyrinthine disposition of the mucous membrane, which is covered with low cylindrical cells. Each seminal vesicle is, as it were, a continuous, tortuous tube, with its many windings and numerous diverticula springing from same. Within, its membranous coat is thrown into myriads of folds containing elastic fibres, so that in health it is as one great labyrinth.

From the complicated anatomy of these parts and the numerous hiding places for the gonococci, it may appear quite impossible ever to eradicate the infection once it has gained a foothold. And, indeed, it might be were it not for the part Nature plays in it.

The first effect of the entrance of gonococci into the urethra is a simple inflammation with the characteristic symptoms, heat, pain, swelling, redness, etc. Little of the exact pathology of acute gonorrhea was definitely known until the classic experiments of Professor Finger, who, with his colleagues, Ghon and Schlagenhaufer (1894), was given permission to inoculate patients in the moribund state with a pure gonococcus culture. I wish to describe briefly their findings in a three days old, uncomplicated, untreated case.

Their sections showed the mucous membrane of the urethra swollen and loosened from the meatus to the middle of the pars pendulosa. The upper surface was covered with a stratum of pus corpuscles, lying cell on cell in four or more layers upon the epithelium and filling in the infoldings so that each of these pockets appeared as if filled by a cork made up of closely packed pus cells. The changes in the epithelia depend upon their variety. The squamous epithelium of the fossa navicularis shows relatively few changes. It remains intact, and only at the surface are occasional cells desquamated. Gonococci are found in the pus cells lying upon the surface and spread out as a turf upon the uppermost layer, *but nowhere is a penetration of this epithelium to be seen.* In the cylindrical epithelium, however, are noted more marked changes, which are not evenly distributed over the surface of the urethra, but are most pronounced around the openings of the lacunæ and glands. Where the upper surface of the mucosa is smooth, without lacunæ, gonococci are present in the pus cells lying on the firmly attached epithelium. They push themselves forward, pair by pair, into the intercellular spaces and gather in groups. Gonococci are also found in the pus cells, which are squeezed between the epithelia as well as in the pus cells which lie between the compensatory epithelial cells and the connective tissue. But here their number is few. On the other hand, gonococci are found in large numbers in the perifollicular

*Read before the New Rochelle Medical Society, May 12, 1913.

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regions. Here the pus cells that lie upon the surface and are squeezed between the disintegrated cylindrical cells are tightly thronged with gonococci. The Morgagni's lacunæ and the glands of Littré show changes analogous to those of the epithelium of the surface. The cylindrical cells are displaced, and between them numerous pus corpuscles are found; but noteworthy is the fact that the secreting epithelia in the acini at the base of the gland show no changes, but remain intact and free from gonococci, even though covered with pus corpuscles containing gonococci. The changes in the connective tissue consist in a preponderant infiltration of round cells, extending in places even as far as the corpora cavernosa. Gonococci groups which are located between the transitional cells of the lowest layers of the epithelium send off shoots into the connective tissue and settle themselves between the fibrillæ, partly extracellular and partly intracellular, but always involving only the uppermost portion of the submucosa. The capillary vessels are strikingly dilated, their lumen is filled to bursting with polynuclear leucocytes, and their walls, except for the wandering out of leucocytes, show no changes.

Considering the relatively short duration—only a three days' process—which has been described, it is striking that the histological picture is already so intensely pronounced, and it is especially to be noted that *the process is not evenly distributed over the entire surface of the urethra, but is predominantly lacunar and perilacunar.* Also that the gonococci seen upon the surface of the epithelium and squeezed between the degenerated epithelial cells are practically all enclosed in the pus cells, while of those seen in the subepithelial spaces some are intracellular, but many more are extracellular. Here, then, is Nature's battle ground for the struggle against this invading enemy. She has dilated her bloodvessels to the utmost capacity and is sending forth her warriors, the leucocytes, to engulf the rapidly increasing army of gonococci by her usual means of defense, *phagocytosis.* The belief that the gonococcus is a parasite of polynuclear cells, in which it thrives and has its well being, and that the extracellular ones are shortlived, is not shared by the writer. That the gonococci are found intracellularly is not a predilection of the gonococcus, nor is it a mere coincidence, but is a definite, specific act of Nature. If one incubates an emulsion of gonococci with washed human blood corpuscles for ten or fifteen minutes, after the method of Sir Almroth Wright, he finds practically no gonococci within the leucocytes. But let him add an equal amount of fresh blood serum, and incubate for a few minutes, and he will find the leucocytes filled with gonococci, just as happens with staphylococci, streptococci, etc. Again, gonococci are nonmotile organisms, and it is rather fanciful to believe that they must depend for their existence upon some charitable leucocyte moving toward them to afford them sustenance. The leucocytes that have performed their function of phagocytosis and contain gonococci show no evidence of having been injured by the latter. Indeed, if gonococcal pus be stained with neutral red, the intracellular cocci are stained red, while the extracellular ones remain unstained. This procedure was used by Metchnikoff to demonstrate the secretion of an acid peptic fluid by the phagocytes, and the staining of the intracellular, and not the extracellular, gonococci shows similar action on the part of the gonorrheal pus cells. As has been pointed out above, gonococci on the surface of the epithelium were almost entirely intracellular, while of those below, in the lower strata, some were intracellular, but many others extracellular. It is evident, therefore, that the gonococci are not dependent for their existence upon the protoplasm of the polymorphonuclear leucocytes. It is the writer's custom to examine microscopically the discharge of every patient at each visit, and it has been his observation that the new, well developed cases where no evidence of phagocytosis is shown are invariably more stubborn and yield to treatment much more slowly than do the cases where the gonococci are mostly intracellular. It is in these cases that I feel that vaccines are indicated, for I believe the degree of phagocytosis and the opsonic index go hand in hand in this process. Finger failed to infect patients suffering from fever with general leucocytosis, and cases of spontaneous cure have been reported in attacks of pyrexia, to say nothing of that proportion of cases that Nature herself has cured.

Since in the early stage of gonorrhea Nature's mode of fighting the gonococci is by phagocytosis, the indication in treating this disease is to employ that remedy which will, first, stimulate leucocytosis; second, act as a mild gonococcicide; and, third, which will thoroughly cleanse the urethra without injury to the tissues. *Thus, in the early stages, the purpose is to increase the discharge, and not to check it, as has been the time honored custom.* Nothing is more clearly contraindicated than the prevailing use of astringents, which, by their constricting effect on the mucous membranes and bloodvessels, hamper instead of assist Nature's remedial processes. In the writer's experience, after much experimenting, chemically, bacteriologically, and serologically, the indications stated above at present are best met by the use of Neisser's own remedy, protargol, in a ¼ to ½ per cent. solution. This agent so acts on the urethra that its injection in a normal urethra will produce a discharge macroscopically and microscopically identical with that of gonorrhea, lacking, of course, the gonococci. Protargol in a two per cent. solution, however, is astringent, like most of the popular silver salts, and is to be avoided so long as gonococci are present. The use of strong astringent injections in this condition is to be condemned severely, as their working is distinctly contrary to Nature's, and their effect is to predispose to complications and to chronicity of the process.

In too many instances the term "abortive treatment," as used in the text books, appears to mean the cocainizing of the urethra and the injection of some strong, irritating, astringent antiseptic, such as two per cent. silver nitrate solution. Indeed, in the 1912 edition of Keyes, where he introduces the subject of abortive treatment, one notes the following: "In the production of chronic urethritis the abortive treatment has taken the place of the sound of our forefathers." And a little further on, in

italics, appears, "the surest way to abort gonorrhea is not to try to abort it." This is a very unfortunate teaching if it should result in fixing the belief in the mind of the physician that no patient who becomes infected with gonorrhea can be cured within a few days. Whether or not the word *abortive* correctly describes the treatment, certain it is that a large proportion of patients with acute, uncomplicated cases, seen within twenty-four hours after a frank discharge is established can be cured within five or six days, except in cases of primary infection.

Our so called abortive treatment is practically the same as that employed in corresponding cases of simple anterior urethritis of longer standing. It is in principle the same as that described by Frank, Lewin, Bierhoff, and others. If a patient is seen within twenty-four hours after discharge has begun, a microscopical examination of the pus is made. The patient is instructed to urinate into two glasses, passing most into the first glass, the last two or three teaspoonfuls into the second glass. If this second urine is clear, and the patient gives no clinical evidence of a posterior involvement, we may hope to succeed with the so called abortive treatment. By means of a Janet-Frank syringe and a Wheeler tip, the anterior urethra is flushed with 300 to 450 c. c. of a ¼ to ½ per cent. solution, depending upon the intensity of the inflammation. The head of the penis is held firmly between the thumb and first finger of the left hand, the tip is inserted into the meatus, and the solution slowly injected until the urethra is distended. The syringe is then slightly withdrawn, and the solution is allowed to flow out. Successive flushings are continued until the whole amount of solution is used. A hand syringe of a capacity of at least two drachms is prescribed, and the patient is instructed how to inject himself every four hours. He first urinates and then slowly and gently injects the solution, which is to be retained in the urethra for three minutes. This procedure is to be repeated, thus making two three minute injections every four hours. Very often on the occasion of the patient's visit on the following day I have found that the microscope showed no gonococci whatever. In such cases a fair prognosis can be made. Even if a few germs are still to be seen, there is no reason for discouragement as to the possibility of cure within five or six days. The initial treatment is repeated, and the patient reports on the following day. No internal medicine is given, and no diet regulation is attempted beyond the advice that the patient abstain from alcohol and highly seasoned foods. Exercise should be interdicted to prevent complications, and the patient is directed to drink freely of water. After the third treatment, if no gonococci are found, the frequency of the patient's injections is decreased, and after the fourth treatment they are discontinued altogether, and the patient is kept under observation. Should he remain free of gonococci the case is said to be aborted. If, on the other hand, not all of the gonococci have been eradicated and they reappear, immediate treatment is again instituted, and regulated by the microscope. Though our hope may not have been realized, at least we have the satisfaction of knowing that we have not unduly prolonged the attack, and by continuing the treatment

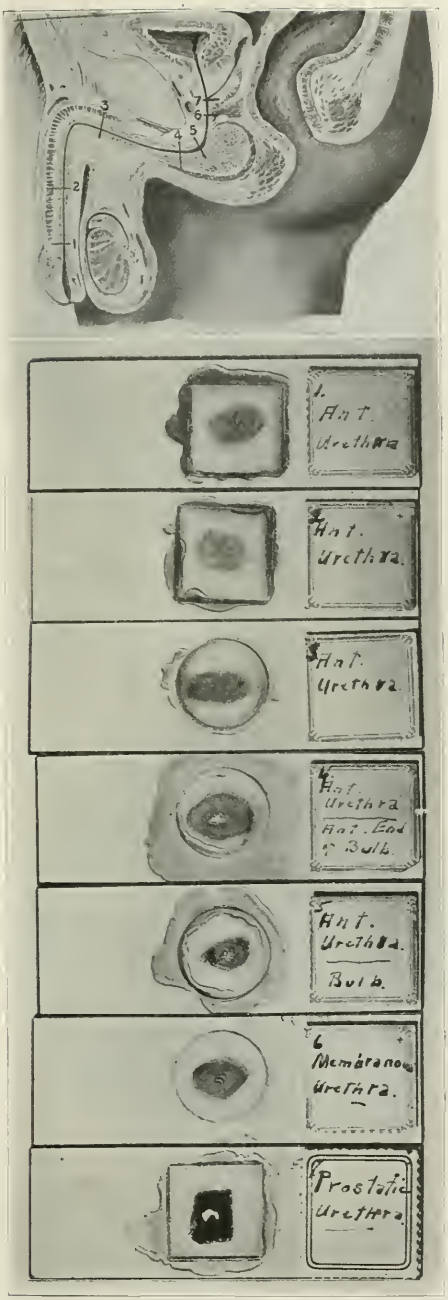

FIG. 1.—Photograph of slides. Cross sections of normal urethra showing variations in size and shape. Location of sections is indicated by corresponding numbers on cut. (From author's collection.)

we can limit the average duration of the gonococcal infection to from three to six weeks instead of the usual six weeks to three months.

If at any time the second urine becomes turbid or the patient gives clinical evidence of posterior

FIG. 2.—Cross section of anterior urethra (slide 3, Fig. 1), × 30, showing lacunæ and glands which harbor gonococci.

involvement, the prostate and vesicles are examined. This procedure is carried out by first injecting 150 c. c. of one half per cent. solution into the bladder and instructing the patient to void it. Should the cut off muscle prove resistant, a small quantity of one half per cent. cocaine solution is injected by a hand syringe, and is permitted to remain in the urethra for from three to five minutes. The prostate and vesicles are then *gently* massaged, and the secretion is expressed on a slide and examined microscopically. The entire urethra is again washed with 150 c. c. of the solution, and the patient is again instructed to void. Should the prostatic secretion show involvement of the prostate and vesicles, regular massage should be instituted about every second day, unless contraindicated by the extreme severity of the inflammation. This should be continued until the secretion is free of gonococci and only occasional pus corpuscles are seen.

Should the prostatic secretion prove free of infection and the anterior condition show a tendency to persist, local treatment is begun to destroy the gonococci which have been harbored in the glands and lacunæ, and to cause an absorption of the round cell infiltration. This is best accomplished by means of the Frank modification of the Kollmann dilator, which is an anterior, irrigating dilator with three prongs instead of four. It has an irrigating attachment with holes in the shaft of the instrument to allow the inflow of fluid and an outlet to permit the escape of fluid while the instrument is *in situ*. Irrigation and dilatation are performed simultaneously, and the advantage of the three prong construction is readily appreciated. Since most of the folds, lacunæ, and glands are located on the upper surface of the urethra, the four prong dilator makes pressure directly against this surface, while the three prong instrument dilates it laterally and allows a full irrigating flow against the upper aspect, where it is most needed. The urethra is first flushed thoroughly with 150 c. c. of solution, and the instrument is introduced as far as the cut off muscle. Slow, gradual dilatation is begun, and at the same time the canal is irrigated with a liberal amount of the solution. Care must be taken against overdilatation, and after the withdrawal of the instrument the entire urethra is again thoroughly flushed. Dilatations are made every second or third day, the patient continuing his hand injections until the urethra is well dilated, when all treatment is discontinued and the patient is kept under observation. I have never seen any complications resulting from the use of this instrument, and have yet to find the first case where the disease has been carried posteriorly by its use.

Should gonococci reappear after such a course of treatment, it is generally an indication that the deeper seated glands are involved and should be destroyed by electrolysis. After thoroughly cleansing the urethra an endoscopic examination is made, and the infected glands located by their wide gaping mouths. The apparatus for electrolysis comprises an electrolytic needle, a milliampère meter, rheostat, and sponge electrode, so disposed that the patient holds the positive pole (sponge electrode) against the groin, while the negative pole (the needle) is passed through the endoscope into the open mouth of the gland. By making pressure on the small button in the handle of the needle, electrical contact is made, the rheostat is set for three to five milliampères, and the application is maintained for from one to two minutes. Bubbles of hydrogen are seen to evolve from the gland opening. Four or five

FIG. 3.—Cross section of membranous urethra (slide 6, Fig. 1), ×28.

glands are thus electrolized at each treatment, after which the urethra is irrigated. It is important that the current for the light of the endoscope and that for the electrolytic needle be taken from different

sources, so as not to cause a short circuit when the instruments are in place.

Generally speaking, gonorrhea begins as an acute and usually ends as a subacute or chronic process. It seems that Nature at first makes a great effort

FIG. 4.—Cross section of normal prostate gland—man of twenty-seven years—, × 30, showing arrangement of acini. Amyloid bodies in acini. (From author's collection).

to rid herself of the offending organisms, but eventually comes to tolerate their presence under mild protest. Should the patient be in the chronic stage when first seen, our primary effort is to determine the presence or absence of gonococci. If present, their exact location, whether anterior or posterior, must be determined, and with these points definitely settled the above indicated treatment is followed.

It is not within the scope of this paper to describe minutely the treatment of female patients, and I can only mention that our method follows the same general principles as outlined—first, definitely locate the seat of infection and treat it locally by irrigations and applications. Here, too, mild solutions of protargol have served us well.

In conclusion, I wish to emphasize the importance of the systematic use of the microscope in treating this disease. First, from a diagnostic standpoint. Surely no one can say positively of any given case of urethral discharge that the cause is gonorrheal unless gonococci are demonstrated. More than once has it been my pleasing experience to convince a patient (who though himself infected with gonorrhea) that his discharge was the result of a chemical or bacterial inflammation. The increasing frequency of these chemical discharges leads to the opinion that women are using more and more some strong antiseptic douche before intercourse, which douche is so irritating to the male urethra that only the microscope can convince us that the resulting discharge is not of gonorrheal origin. Not infrequently, too, we find a discharge containing a flora of bacteria consisting of myriads of mixed cocci and bacilli, but unless gonococci are present we can assure the patient that, although his partner in coitus may not have observed the rules of highest cleanliness, there was no gonorrheal infection.

From the standpoint of treatment. Since there can be no hard and fast rule as to the duration of an attack of gonorrhea, the physician is, and must be, dependent upon the microscope for definite information as to the progress of his patient. No objection can be urged on the score of time needed, for a slide can be prepared and stained in a very few minutes. It is impossible to emphasize too strongly the need of employing all the scientific aids at our command in the fight against gonorrhea. For when the physician determines to eradicate the gonococcus, and persists with every means at hand until success is achieved, there will disappear that menace—the old chronic gonorrheics with their trail of infected wives and blind babies who are now paying the penalty of neglected treatment.

CONCLUSIONS.

1. Gonorrhea, on account of its complications and sequelæ, must be recognized as a most serious infectious disease.

2. Gonorrhea can be cured if the seat of infection be definitely located and scientifically treated.

3. Gonorrhea can be aborted in a large proportion of cases if patients are seen early.

4. In the acute state phagocytosis is the chief means of combating the infection.

5. It should, therefore, be our endeavor to promote a local leucocytosis by increasing the discharge.

6. Time honored astringent injections which aim

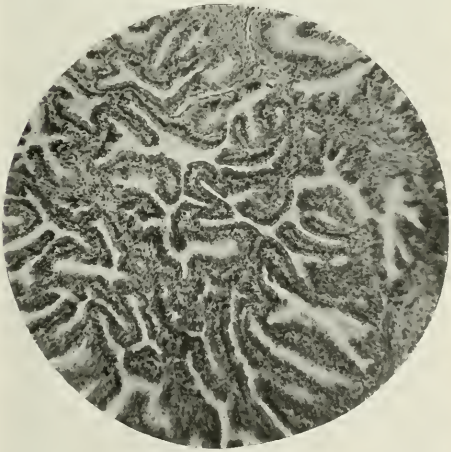

FIG. 5.—Cross section of normal seminal vesicle, ×70, showing labyrinthine disposition of mucous membrane. (From author's collection.)

to check the discharge are to be condemned so long as gonococci are present.

7. Only by the systematic use of the microscope can we intelligently direct our course of treatment.

30 EAST FORTY-SECOND STREET.

THE RELATION OF TRAUMA TO BONE TUBERCULOSIS.*

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Courts of justice, as well as medical societies, have many times been the scene of animated controversies between physicians as to the cause of bone tuberculosis and its relation to trauma. Hag (1) reports a case of a man who received an injury to the great toe, later becoming the subject of a cold abscess of the cervical vertebra and one in the upper portion of the sternum, and, later, tuberculosis of the elbow. It is noted that experts for the defendant, an insurance company, contended that the man had tuberculosis before the accident, that the development of the subsequent lesions would have followed in the natural course of the disease, and that the accident was merely a coincidence, and not the cause of the disease. The court decided in favor of the defendant. In this country similar conditions have resulted in favor of the plaintiff, or defendant, depending upon the impressions made upon juries.

The apparent causes of the confusion lie (a) in the varying interpretations of the experiments upon animals that have been performed; (b) a failure to critically analyze the kind of trauma used; (c) the impossibility of actually reproducing the human clinical process and phenomena by the methods resorted to in animal experimental research; (d) the extreme difficulty of determining whether trauma is a cause or an effect; (e) finally, reluctance to accept the established fact that infection is the only essential etiological factor, and that contributory sequelæ are to be found in any condition that lowers vitality and diminishes the powers of resistance.

While Krause's animal experiments, (2) in 1891, are the most frequently quoted to prove that trauma was an important factor, Schuller's (3) experiments in 1880, and Salvia's (4) in 1904, also pointed in the same direction. Krause injected pure cultures of tubercle bacilli subcutaneously into guineapigs and intravenously into rabbits. Schuller injected tuberculous material, sputum, glands, etc., through a tracheotomy opening into the lungs of dogs and rabbits. Salvia injected virulent cultures of tubercle intravenously into rabbits. Krause, directly before or immediately after, or after a varying space of time, injured a joint or broke a bone. Schuller, coincidentally, injured one of the knee joints. Salvia simultaneously subjected various parts of the body to traumatism. Results: Krause.—In no case was there evidence of tubercle at the site of the fracture. In thirty-three and one third per cent. of the guineapigs, fifty per cent. of the rabbits, the injured joints became tuberculous. The uninjured joints with a single exception, remained healthy. Schuller.—A generalized tuberculosis and a tuberculous synovitis of the injured joints. Salvia.—In the flat bones the violence practically always decided the localization of tubercle. Slight injuries to the parts sometimes resulted in tuberculous disease.

In direct opposition to the reported results in the foregoing, the following animal experiments are convincing that infection, and not trauma, is the cause of bone tuberculosis. Muller (5), in 1886, injected the nutrient bone vessels of goats without trauma. Benda (6), in 1899, made numerous experiments upon rabbits without trauma. Lannelongue and Achard (7), in 1899, inoculated guineapigs in various ways, and directly afterward, or some time later, produced local injuries to the bones and joints. Friedrich (8), in 1899, introduced tuberculous cultures of low virulence into the left ventricle of rabbits, certain of the joints having been previously injured. Fraser (9), in 1913, resorted to the following methods: (a) Inoculating dried bacilli without trauma; (b) infection by ingestion; (c) infection of the metaphysis; (d) direct infection of a joint; (e) direct infection into a mesenteric vein; (f) direct infection into the left ventricle; (g) direct infection into femoral artery. Results: Muller.—A multiple tuberculous osteomyelitis of the bone supplied by the infected blood vessels. Benda.—Found an actual focus of tuberculous disease in the tunica interna of the blood-vessel from which there was a continuous liberation of bacilli into the blood stream. Lannelongue and Achard.—Failed to produce tuberculous lesions in the joints subjected to trauma. Friedrich.—Found that the joints subjected to traumatism were less likely to become infected than the apparently healthy ones. Frazer.—Without trauma, tuberculous lesions were produced by injection. He offers the following conclusions: 1. Direct infection of the medulla of the long bone is unlikely to lead to the development of a tuberculous osteomyelitis. 2. Inoculation of the interior of a joint with tubercle bacilli readily produces tubercle of the synovial membrane. 3. From such infected joints the epiphysis or metaphysis of the bone become diseased. 4. Infection of the arterial blood does not result in the local development of tubercle of the bones and joints. 5. Infection of the main artery supplying a limb leads to the development of tuberculous disease of certain of the joints of that limb. 6. Direct infection of the nutrient artery does not result in tuberculous osteomyelitis of the bone.

A study of all of the animal experiments, referred to above, demonstrates that trauma does not influence the development of tuberculous infection, inasmuch as the same kind of resulting disease was obtained by infection without trauma as when trauma was employed, and, notably, Friedrich's statement that injured joints were, in reality, less affected than the apparently healthy ones. It is impossible to accurately compare animal experiments with the process as seen in human beings, for the reason that the means of infection employed in animals essentially differs from the infection of children. Animal experiments are wholly artificial, and necessarily so. Direct inoculation of a child's joint does not occur, nor is trauma of any kind ever applied in the manner resorted to in experimentation. The results of animal experimentation are therefore

*Read by title before the American Orthopedic Association, May 7, 1913.

interesting, instructive, and illuminating, but too much reliance should not be placed upon them in determining a solution of the problem. Very little information is obtainable as to the kind of trauma that was employed in the experiments. It is impossible, therefore, to determine the relative value, as causative or contributory factors, of severe injuries, sprains, contusions, lacerations, bruises, indirect trauma, functional trauma. Krause stated that there was never found any evidence of tuberculous disease at the site of a fracture. If it were possible to study the bone or joint before the massive or gross lesion was perceptible, there seems little doubt that a progressive tuberculous process would be found existing in such a structure.

Senn (10), Cornet (11), Van Meter (12), Gross (13), Stern (14), Mircole (15), Honsall (16), are among those who oppose the theoretical consideration of trauma as a cause of bone tuberculosis, while Ely (17), after his elaborate and convincing study of bone tuberculosis, states: "It is no more necessary to predicate an injury in joint tuberculosis than in pulmonary or lymph node tuberculosis." La Peyre (18) observes that a great number of cases of tuberculosis, in spontaneous development, are frequently brought into connection with a trumped up accident. George R. Fowler (19) says that animal experiments have shown that traumatism does not favor the localization of tuberculosis. Whitman (20) states that the exact relation of traumatism to disease can only be conjectured. L. A. Sayre (21), in 1888, expressed the view that the origin was always the result of trauma. Nichols (22) considers injuries of moderate severity as favoring the production of the disease. Goldthwait, Painter, and Osgood (23) speak of trauma as an exciting cause. H. L. Taylor (24) says it may or may not be a cause; and Bradford and Lovett (25) state: "It therefore seems rational to assume that trauma may cause tuberculous joint disease in children with a tuberculous tendency." W. Watson Cheyne's (26) strong presentation in advocacy of the etiological position of trauma throws doubt upon the subject in the following words: "It would be interesting, if the points mentioned above should be confirmed by more extensive statistics, to establish, if possible, some relation between the pathology of these diseases and the injury, in order to account for the facts."

The oft repeated statistics giving the history obtained from parents show:

C. F. Taylor (27) found traumatic history in..53 per cent.
Konig (28) found traumatic history in.....50 per cent
Gibney (29) found traumatic history in.....42 per cent.

Pietrzikowski (30) expressed the opinion that twenty per cent. of all tuberculous affections of the bones and joints were connected with some form of injury; this rarely amounted to a fracture or dislocation, but was usually an injury of lesser degree, such as a sprain or a bruise. Whitman (20) quotes Voss (31) as finding an injury as an exciting cause in more than twenty per cent., but that its influence could be clearly established in only seven per cent. These figures are entirely without significance because they are based upon the crude statements of parents, and express their opinion as to cause and effect. It is a matter of observation that in the history of infantile paralysis and many other conditions, a history of trauma is almost always obtainable and equally irrelevant. If these figures are for the moment accepted for the sake of argument, the natural inquiry will be as to what has occurred in those cases where there was no trauma to produce exactly the same conditions? One is forced to the conclusion that infection is the essential etiological factor, and that if trauma has occurred it is incidental and without prejudicial influence.

The kind or grade of trauma deserves consideration. Krause's experiments and the clinical observations of surgeons are convincing that fractures do not cause bone tuberculosis. It is inconceivable that slight injuries of sprains and contusions can be causative factors. The revelations of the radiograph have many times proved that the trivial injuries of sprains were, in the majority of instances, fractures not easily recognized clinically. Sprains must, therefore, cease to be classed as slight injuries and assume rank with other severe injuries. Cornet (11) has given emphasis to the fact that the hands are more exposed to trauma than any other part of the body, and yet statistics show that they are less frequently involved in bone tuberculosis than the spine, hip, knee, etc. Functional trauma, or the injury sustained by the normal use of a part, is resorted to in the attempt to explain the occurrence of bone tuberculosis when the spine, hip, and knee are the most frequently invaded joints, but it lacks rational explanation.

The natural protection of joints is too large a subject to be considered at this time. It must suffice to refer to the knee joint as an example. In falling and striking the knee the tuberosity of the tibia receives the impact, while the patella and the entire knee escape direct injury, and yet the condyles of the femur are far more frequently the original site of tuberculosis than the tibia. In the Army Medical Museum in Washington, D. C., there is a most instructive exhibit of thin sawed sections of supposedly normal bones that were made by Dr. Edwin R. Hodge in 1892. A careful examination of these bone sections revealed some ivory-like masses and walled in cavities. The examination of specimens after excisions and amputations have revealed exactly similar bodies, so that a correct interpretation may be accepted. These white bodies are the site of original bone tuberculosis that have occurred in favorable conditions. The tuberculous process has been walled in; the osteoblasts have ceased to be active; and proliferation of bone has effectively isolated the minute cavity formed by the stage of destruction. The shell like walls gradually thickened until finally a solid mass formed, to be discovered after death, or separation of the parts, as evidence of a preexisting, although, possibly, unrecognized bone tuberculosis.[1] At autopsy a large number of healed or arrested areas of tuberculosis, in soft tissues and in bone, are diagnosticated both histologically and bacteriologically, though during life no evidence or symptom of the disease appeared to exist. The bronchial, the

[1]The interpretation herein placed upon the sawed sections, referred to above, was confirmed by personal inspection by Leonard W. Ely, Edwin R. Hodge, J. Louis Ransohoff, William Hessert, and William Fuller, on May 7, 1913.

mesenteric, as well as the cervical glands are the structures that appear to harbor tubercle bacilli which have proved pathogenic to the lower animals, and may not have caused any active lesion in man.

When tubercle bacilli do exert pathogenic properties in man it appears that some tissue, which had previously harbored the organism, becomes altered in some manner, resulting in a lowered state of health and resistance, and allowing a diseased condition to result. There is certainly some materials or substances existing in the blood serum, lymph, or other tissues of the body, which, in health, exert bactericidal properties and thus protect the individual against disease. When a person has been exposed to cold, heat, or irritating fumes or dusts, in the organs or tissues attacked or affected the normal resistance is lowered, resulting in a difference in cellular elements, difference in fluid content, and as a consequence the organism overcomes the lessened resistance, multiplies, elaborates its products, and the resulting process is brought about, sometimes after a few months or sometimes after years. As the process goes on, the organisms find their way to different structures or organs by way of the circulation of lymph, and take up lodgment and may remain quiescent for years. Thus in pulmonary tuberculosis, if histological and bacteriological studies are made of other tissues and organs, the changes that were present in the lung will also be found present in these organs or tissues; yet, before death, no symptoms were ever referred to any other organ than the lungs. It is highly probable that when pulmonary tuberculosis exists there is widespread distribution of the bacillus by the circulation, and the organism lodges in tissues or organs, sometimes producing active disease, while in other instances no lesion ever develops.

The relation of trauma to bone tuberculosis must, sooner or later, be established as having no existence in the etiology—or in the beginning of the process. The primary cause of bone tuberculosis is essentially infection by the bacillus of tuberculosis. Any condition which lowers the vitality, and therefore the resistance of the patient, must be considered contributory. Fractures and other severe traumatism will not cause bone tuberculosis in animal experimentation or in human beings. It is inconceivable that lesser injuries should do what greater injuries fail to do. A patient with a hip ankylosed from any previous affection, when subjected to trauma, would be less capable of resisting or avoiding the injury. The affected hip would be more easily broken, torn, lacerated, or hurt in various ways. A person convalescing from typhoid, or other depressing disease, would not be in a condition to avoid trauma, or quickly recover from the effects of trauma. In exactly the same way, trauma should be considered in its supposed connection with bone tuberculosis. The bacillus tuberculosis is the recognized cause of all tuberculous processes. A tuberculous disease cannot exist without the presence of the organism. How this bacterium gets into the system, whether by ingestion or inhalation, is still a problem which is not yet settled. How this bacterium exists in an organ or tissue for an indefinite time, without producing definite lesions, is another unsettled problem.

When the tubercle bacilli lodge in a tissue, the picture does not change as rapidly as in an acute inflammation brought about by pyogenic bacteria. In an acute inflammation there is an increase of cells in the part, followed by migration of leucocytes (polynuclears) to that area, and these cells soon become what are commonly called pus cells. In fact, the product of a pyogenic process is always pus, which consists of liquor puris and cells. In a tuberculosis process, as a result of the lodgment of the tubercle bacillus, its multiplication, and the liberation of its products, what takes place? The organism lies in a susceptible area or tissue, and instead of its attracting the polynuclear leucocytes, there seems to be a positive chemiotaxis toward the small lymphocytes or lymphoid cells. At, or near, a small bloodvessel the lesion first commences, and we have a cellular accumulation made up of lymphoid elements, proliferated endothelial cells (or epithelioid cells), and some few polynuclear leucocytes. In most cases there is formed the histological unit known as a tubercle, and we may or may not have the large multinucleated cell called the giant cell. Giant cells are not always found in tubercles. Following the formation of a tubercle, which progressively increases in cellular elements, there is a change which has been described as coagulation necrosis. As there is no new blood supply furnished this area, and as a result of the continued proliferation of cells, pressure occurs, and, together with the action of the toxine, a further change is brought about, known as caseous necrosis or caseation. This latter process is made up microscopically mostly of debris, broken down tissue elements and disintegrated cells.

This whole process is distinctly different from an acute inflammatory one because, in the latter, we get the redness, swelling, heat, and pus formation, whereas in the tuberculous process the successive changes are distinctly different. It usually takes months for the process to mature or go on to the formation of tubercles; or tubercle formation may take place in various organs without giving any evidence of it to the naked eye. This is well instanced in submiliary tubercles of the kidney, spleen, lymph glands, liver, and even the lung. These submiliary tubercles might also be found present in the bone marrow, the periosteum, or the cancellated structure of bone if systematic histological studies were made similar to those made in other organs. If a blow or trauma is received upon the hand, or any part of the body, redness at once develops. If this injury is delivered with sufficient force, or if bacteria gain ingress to that area, acute inflammation supervenes. Let us take up the subject in question, tuberculosis of bone. Where does this process first manifest itself? (a) In the bone marrow? (b) In the cancellated structure? (c) In the periosteum or capsule of a joint? If, in any of these structures, the histological process is the same, that is the formation of macroscopic or microscopic tubercles, the same pressure necrosis and consequent caseation with destruction of the bone and the connective tissue of the joint. This process can be explained in the same way as the latent infection in other structures. In other words, a small focus or, it might be, foci existed or per-

sisted for months or years, and in an insidious, irregular manner, gradually but certainly grew until the typical lesion of a fully organized tuberculous process developed. It is well known that a person suffering from pulmonary tuberculosis will present constant histological lesions in the spleen, liver, and kidney. Are these microscopic lesions the result of trauma over the liver, spleen, and kidney? Would it be correct to surmise that injury caused the formation of hundreds of tubercles deep in the parenchyma of these structures? Or, as suggested previously, if a more thorough and systematic study of the cancellated structure of bone were to be made, there is very little doubt that tubercles (as a result of dissemination by the blood of tubercle bacilli to this structure) would be as prevalent as in the other organs just mentioned. Too much importance cannot be given this question of latent or quiescent tuberculous condition in any tissue of the body. The areas containing these latent foci must, of necessity, have first harbored the tubercle bacillus, and there is no way more probable than that they had been transported by the blood stream, deposited there, became encapsulated with the cells of the part; then, again, had been stimulated into activity, multiplied, and produced a typical or nontypical tuberculous process. All histological tubercles are not alike, and a tubercle may simply be an irregular mass or accumulation of lymphoid cells without giant cells and with very few epithelioid cells. Infestation differs from tuberculous infection, and therefore protracted illness (such as typhoid fever) would act as a predisposing or contributory cause to the tuberculous lesion and not as the specific or exciting cause. It is impossible to determine upon any rational basis that trauma bears any other relation to tuberculosis than a coincidental condition.

The three following quotations are given as a fitting conclusion to this presentation of the subject, as expressive of the present status and confirming the statements made by Gross in 1872 and Senn in 1892. Gross (13), the profound surgical pathologist, 1872, says:

The exciting causes of this affection are generally very obscure, if not utterly inscrutable. The surgeon is often told that the patient, perhaps weeks or months before the appearance of the characteristic phenomena, received some injury, as a blow, fall, kick, or that the affected joint had been sprained, bruised, or twisted, but such information is usually not trustworthy, or if such an occurrence did take place, it probably exerted little, if any influence in developing the complaint. Unless very severe, it could no more provoke tuberculosis of a joint than a similar injury of the chest, tuberculosis of the lungs, or of the head, tuberculosis of the arachnoid membrane. . . . The use of unwholesome food, chronic disorder of the digestive apparatus, imperfect assimilation, or inadequate nutrition, protracted courses of mercury, and the exhaustion consequent upon copious and repeated hemorrhages, infantile cholera, chronic diarrhea, scarlatina, measles, smallpox, typhoid fever, and, in short, whatever has a tendency to enfeeble the system and derange the blood, are so many predisposing causes of the disease, if they do not actually call it into activity.

N. Senn (10), 1892, states:

The trauma only serves as an exciting cause in the production of bone tuberculosis in persons already infected with the essential cause. Clinically, tuberculosis of bones can be traced only in a small percentage of the cases to a traumatic origin. It is, as Volkmann asserted long ago, characteristic that the traumatism is always slight often quite insignificant; tuberculosis of bone, even in tuberculous subjects, seldom, if ever, follows a fracture as the injury in such cases is productive of such active cell proliferation that it will hold in abeyance the pathogenic action of the bacilli which might reach the seat of injury with the extravasated blood. It is also possible that, in many cases at least, the attention of the patient or his friends is first accidentally called to the existing tuberculous focus by the immediate effects of the injury, the latter having had no influence in the causation of the disease. Every child large enough to run around injures himself more or less almost daily, and yet tuberculosis of bones and joints follows as a consequence only in comparatively few; and in such cases the essential cause must be present in the blood or tissues at the time the injury is received.

Richard Stern (14), in his elaborate study, *The Traumatic Origin of Internal Diseases,* 1910, states:

Upon the basis of clinical experience the majority of surgeons, at the present time, have reached the conclusion that the influence of trauma is not concerned with the development of bone or joint tuberculosis but with an effect upon bones and joints that were previously diseased with tuberculosis.

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A DIAGNOSTIC STUDY OF THE FACE.

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After having scrutinized some fifty thousand faces during the past year, and after having examined the five thousand most interesting of these with some care. I have arrived at the conclusion that in the physiognomy and external anatomy of the face we have a field for diagnostic study that cannot profitably be eliminated from the consideration of any medical, surgical, or mental case. To derive the most from facial inspection one must regard it as he would an impressionistic painting where a few scattered lights, a shadow, and an indistinct skyline bring to the inner eye a vision of a noble city in all its grandeur. He must have catalogued in his superficial consciousness every

entity to which a given symptom may belong, and this is not nearly so difficult as it would seem if one will frequently epitomize.

Subconscious psychic reflex frequently plays a part in the so called "snap" diagnoses made by some men. I have, for instance, observed a certain physician who often, after a general glance at a patient's face, made a more thorough examination and found decided physical or mental abnormalities. This doctor realized that it was entirely because of the primary inspection that the secondary examination was made, yet he could not tell what it was in that special face that had attracted his attention. This accomplishment is an interesting one in this connection, but, of course, it is not one to be sought after or hoped for by most of us, since accurate diagnosis depends in most cases on more tangible knowledge.

FIG. 1.—A study for the physiognomist; the profile of this pugilist indicates strength and physical courage, but not pugnacity.

When a given symptom is observed on the face of a subject, two things should be done: First, consider the conditions in which the symptom is most often present, and then rule out the conditions where it less frequently occurs in the direct order of their infrequency. The first of these almost every one does, as when he sees contracted pupils he thinks of opium poisoning; a long narrow nose suggests adenoids; rhagades and saddle nose suggest hereditary syphilis; enlarged bones suggest pituitary disease; a malar flush suggests pthisis pulmonalis; drooping lids bring up trachoma, and so on; suffice it to say that there are at least one hundred and fifty-four distinct, not uncommon disease entities that present more or less prominent facial symptoms. The symptoms and maladies considered here are the ones not uncommonly seen in average work, and I think the ones most commonly forgotten and which should be kept in mind in order that they may be utilized on short notice.

FIG. 2.—A simian reversion type with stigmata including malformation of helix. This case was selected by a lay worker from a school for the feebleminded as a mental defective. Competent examination revealed the fact that this subject was of normal mental balance, above the adult average for his race, and spoke three languages fluently.

The following somewhat heterogeneous group of conditions and diseases present facial signs with considerable regularity: Nationality, temperament, occupation, sexual relations and habits, sensuality, drug addictions, alcoholism, emotional excitement, loss of sleep, hereditary syphilis, intracranial syphilis, paresis, tabes dorsalis, brain tumor, psychopathic predisposition, psychogenetic disorders, sane and insane pananoiac systems, dementia præcox, epilepsy, hypomania, cyclothymia, paralysis agitans, exophthalmic goitre, hysteria, neurasthenia, melancholia, manic depressive insanity, chorea, hydrocephalus, idiocy, imbecility, feeblemindedness, higher feeblemindedness (moron), moral obliquity, local and other paralyses and atrophies, acromegaly, cretinism, myxedema, osteitis deformans, torticollis, lupus, local epithelioma, and malignant tumors of other parts, herpes zoster, erysipelas, anthrax, glanders, purpura, hemophilia, leprosy, rhachitis, acne, goundou, menstruation, pregnancy, menorrhagia, fatigue, severe pain, exhausting diseases in children, iritis, glaucoma, conjunctivitis, keratitis and its sequelæ, trachoma, recession of the eyeball, psoriasis and other skin diseases, sarcoma of superior maxilla, tetanus, actinomycosis, phosphorus, silver, lead, arsenic, and opium poisoning (chronic poisoning by the first four), acquired and congenital heart disease, simple cardiac hypertrophy, pseudoleucemia, both varieties of true leucemia, chlorosis, pernicious anemia, malaria, Addison's disease, parasitosis, chronic atrophic rhinitis, nasal obstruction, sprue, chronic gastrointestinal diseases, hepatic congestion, cirrhosis and abscess of the liver, cholecystitis and acute catarrhal jaundice, arthritis deformans, rheumatic fever, typhoid fever, scarlet fever, measles and German measles, smallpox, varioloid, varicella, yellow fever, pneumonia, tuberculosis and other febrile affections, atheroma, renal disease, appendicitis, peritonitis, pancreatitis and acute yellow atrophy of the liver, local reaction to irritant cosmetics and applications, such as oil of cade, hernia and weak abdominal walls, fibroid tumors and ovarian cystoma in fair complexioned people, gout, lithemia and intestinal toxic absorption, parasitic affections of the face and scalp, such as ringworm, sycosis barbæ, and favus, and impending death.

Of all these, an enumeration and short explanation of the cardinal facial symptoms of the most interesting will be given. The symptoms and signs described are objective ones, and may be studied without cooperation on the part of the patient or subject.

1. *Nationality and race.* By a mental survey, based on experience, of complexion, contour, shape, and expression, along with a study of the type of each feature, one may arrive at an accurate conclusion regarding the nationality, providing the subject has recently come from his native heath. The latter proviso is an important one, since it is probably true that all white races after being in the United States ("the melting pot

FIG. 3.—The features, countenance, and position of the head shown here are absolutely diagnostic of eunuchoidism of congenital origin. Note the labial circle herein described. This subject was slightly above the normal mentally for his age, race, education, and previous environment.

of the nations") for a period of ten years or more, even though the blood retain its original purity, lose many of their native facial characteristics, and tend toward one common American type.

I am informed by Dr. Matthew K. Gwyn, of the

FIG. 4.—A case of acromegaly that was mistaken for an atypical myxedema.

Anthropological Division at Ellis Island, that it is possible to differentiate members of distinct races (the word "race" is used here in its broader sense) by measurement, provided they approach the racial average; in other words, the anthropometric average of each distinct race is decidedly different. In contrast to the white race in general, the African negro retains certain of his racial points of distinction through generations of admixture and contact with Caucasian peoples and long after his skin has lost its original pigment. The facial points to which I allude are: Unity of the cartilages at the tip of the nose (a separation of the lower lateral cartilages at the tip of the nose will be noted in the white race); the lower lateral measurement of the nose will be found to be at least two thirds of its greatest length in the great majority of cases, and Doctor Gwyn's measurements of West Indian negroes show that in these people the two measurements are nearly equal, there seldom being more than 0.2 cm. difference between the length and greatest breadth of the nose; the zygomatic processes are somewhat more prominent than the average for any white race; there is a wider vertical concavity between the superciliary ridges and the frontal eminences than exists in the average of any other people. The condition, however, is sometimes seen in the simian reversion type of whites; the nostrils are more or less circular in outline; even though the skin be white, there is usually a certain kinky appearance of the hair, especially over the temporal bones.

2. *Pneumonia and phthisis.* The former in the prodromal stage is usually accompanied by unilateral flushing, or at least one cheek is of a deeper hue than the other. Active alæ nasi, pallor, and apathy are later symptoms. The malar flush of pulmonary tuberculosis is a well known symptom.

3. *Renal disease* gives rise to a pallid, puffy face, with pouches under the eyes; this only holds true in chronic parenchymatous nephritis, and unless some edema has occurred in other parts the symptom is at best but a probable one. The wax-like pallor is seen in many other conditions. Acute nephritis may give rise to a permanent expansion of the ear lobule and might lead to the detection of chronic forms of the disease.

4. *Addison's disease* presents first a yellow then a light brown, and later a bronze discoloration of the skin. Leucoderma may be present. The facial expression gives the impression of languor, lassitude, and malaise; there may be pallor or flushing, or these may alternate.

5. *Hereditary syphilis* in infancy shows snuffles, ulceration of the nostrils, necrosis of the nasal bones, rhagades, eruption, an "old man" appearance, and anemia. The later symptoms are faulty development, keratitis, iritis, Hutchinson's teeth, characteristic facies, and saddle nose.

6. *Exophthalmic goitre* presents proptosis, with possible inability to close the lids, von Graefe's sign, where the upper lid does not follow the eyeball on looking downward, arterial pulsation, and in many cases facial evidence of nervous agitation, or, more rarely, depression. The thyroid gland will be found to be enlarged, and tremor of the head may be present. It is, however, true that symptoms of hyperthyrea are frequently noted where no enlargement of the thyroid gland exists.

7. *Hernia,* either femoral or inguinal, is frequently associated with a prominent facial symptom, namely "masseteric wrinkling." This sign is seen mostly in presenile men and is of most value in the cases where other parts of the face, especially the forehead and eyes, are not markedly wrinkled. This symptom, under the conditions stated, if not pathognomonic of hernia, is a certain sign of weak abdominal walls or potential hernia. Acute accidents, in cases of rupture, give rise to facial symptoms that all are familiar with.

8. *Sexual habits and relations.* When there is an absence of the physiological stimulus (corporeal contact with males) for the production of the ovarian internal secretion, which is a determiner of sexual intensity and development, hair is quite likely to grow on the lips, cheeks, and chin of women over twenty-five years of age. When these hairy individuals marry, prior to the menopause, the growth frequently disappears after a few months of connubial existence. A fine hairy growth on the face of women between the ages of twenty-five and forty-five is at least evidence that they do not indulge in sexual congress with any degree of regularity or frequency. As to facial in-

FIG. 5.—Masseteric wrinkling, as shown here, if not always indicative of hernia, is a certain sign of weak abdominal walls, which is potential hernia.

dications that lead one to suspect unusual sexual proclivities in young males, the accompanying photograph showing the abdominal tattooing illustrates a result of my observations, which will be published later, regarding this and other cases.

9. *Organic congenital cardiac disease.* In patients of minor degree who live through childhood, and who may present no other external or obvious symptom, there will be seen, in the vast majority of cases, what I have termed in practical work the "waxy lip." This consists of a lower lip that stands out smooth, full, and usually everted. The color is not the cyanotic one seen in the more marked cases of this affection, but is of a crimson shade only slightly darker than that seen on the lips of plethoric persons in a warm atmosphere.

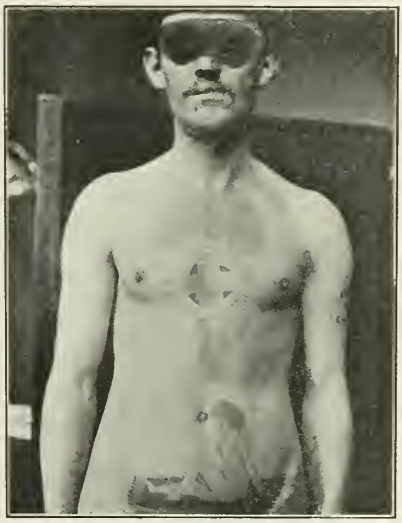

FIG. 6.—Abdominal tatooing of a sensual nature from a constitutionally inferior pervert whose case was diagnosticated by facial inspection.

This appearance of the lips reminds one of the painted lips of wax models.

10. *Eunuchoidism.* This condition seems to me to be an attempt on the part of Nature to sterilize lines of defective stock. The patients that have been examined by my colleagues and myself have usually possessed intelligence commensurate with their age, education, and station, but it is a significant fact that where a history could be obtained there were insane, "peculiar," or defective close relations, usually brothers or parents. The term eunuchoidism here used refers to an exaggeration of Fröhlich's syndrome and is due to hypopituitarism. Now, if hypopituitarism erases the male characteristics, and if hyperpituitarism accentuates them, as in acromegaly, might not pituitary derivatives have some influence on the determination of sex? It would be interesting to know. It is probable that the inherent peculiarities of the anterior lobe of the pituitary body, along with certain actions of the adrenal secretions, largely determine our size, shape, and physical individuality. The facies of the congenital eunuch are distinctive, and once seen should never be forgotten. At this point I wish to mention a facial sign that occurs in these individuals, and also in the lesser degrees of the condition where propagation is still possible. This sign, which I have not before seen described, is the "labial circle" or "oval." The upper portion of this circle or oval consists of the nasolabial folds, and the lower of a depression in the skin in continuation of the lower terminations of these folds and extending to the mental eminence below. The whole picture is one of a rather well defined oval or circle. Anthropological racial peculiarities are partially obliterated in the more marked cases, so that men of various nationalities afflicted with this abnormality resemble each other more than they otherwise would.

11. *Acromegaly, myxedema, and "Paget's disease."* If the anterior portion of the hypophysis cerebri (pituitary body) becomes overactive after maturity, acromegaly is the result. This condition in the earlier stages may be mistaken for an atypical myxedema. The former disease, however, always presents some bony overgrowth, especially of the maxillæ, as well as separated teeth (usually on the upper jaw if but one is involved), enlarged ears, lids, nostrils, tongue, and supraorbital ridges, myxedema; patients possess a dry, rough, thickened skin, with coarse, ill defined features, and require a therapeutic test for the certain establishment of their identity. In "Paget's disease," or osteitis deformans, there is a triangular face with the base upward, and the head occupies a more anterior inferior position than it normally does. In these three conditions, and in others where facial individuality is destroyed, photographs taken at an earlier age should be studied.

12. *Trachoma* presents heavy, drooped, and thickened lids. The disease cannot be definitely diagnosticated without everting or doubly everting the lids and later submitting them to treatment.

13. *Uncinariasis or hookworm disease.* The skin of the face may be of a light tan or tallow color. Edema and bony prominence are common symptoms. There is a fishy, cadaveric stare and the sclera is of dull, chalky whiteness.

14. *Leprosy.* The leonine aspect of advanced leprosy is a well recognized condition. In the early stages of the tubercular form there may be seen a few scattered tuberous nodules on the chin and the nasolabial folds are enlarged and thickened. The skin is indurated and the hair of the eyebrows may be scanty, thin, patchy, or missing altogether. Ulcerations and cicatrices are later seen. Brownish pigmented spots are sometimes present. There may be atrophy of the skin or leucoderma.

15. *Cyclothymia and hypomania.* The first has its normal analogue in the individual who has the "blues" to-day and who is "tickled to death" tomorrow, and the second in the person of the old and chronic "kicker" with a weak inhibitory apparatus and who frequently finds it necessary to apologize. Both are mild forms of functional insanity, but are classed by some as symptoms of other conditions. The cyclothymic in periods of elation or hyperthymia presents a countenance lit

up with uncontrollable joy, and when possessed by a period of depression or hypothymia he presents a picture of extreme despair and is not a stimulating person to associate with. In genuine cases the periods alternate regularly, as in manic depressive insanity, except, of course, at much shorter intervals. The facies of hypomania suggests to us a mind that is preoccupied with a state of abnormal irritability and facetiousness. Smiles may be frequent, yet the tongue is sharp, and the individual will sputter and complain with a full knowledge and realization that he is injuring his personal interests thereby.

16. *Feeblemindedness and moral obliquity.* The two are often associated, the former nearly always with the latter, but the latter not by any means always with the former. There are some brilliant criminals in this world who are apparently lacking in but that one sphere. There were formerly many facial signs that were considered indicative of these conditions, and I wish to speak of some of them here merely to condemn them. The ones to which I especially allude are the various stigmata of degeneration, congenital malformation of the head or special features, and the various reversion types of face and cranium. The latter are but accidents due to special ancient ancestral "determiners" that existed in perhaps one of the numerous ovules of the mother. In the cases that I have observed the other members of the family (except in one instance) possessed no features that were suggestive of reversion. Dr. Eugene H. Mullan, who has had a wide experience with alien defectives, is of the opinion that while anatomical facial characteristics are worthless as a means of recognizing mental deficiency, facial expression is a very valuable aid. Individuals possessing dull, stupid, indifferent, and apathetic countenances devoid of expression should be investigated more thoroughly for feeblemindedness.

The facial symptoms of the insanities are too complex and manifold to be described in a paper of this nature. Suffice it to say that each one has its own typical expression.

There are certain common facial symptoms which when seen alone are often passed by because of the otherwise normal appearance of the subject. These signs may be the outward manifestations of deep seated organic disease, and should be given due weight and consideration accordingly. The most important, with their significance, are as follows:

1. *Facial expressions.* An anxious expression is seen in pain, angina pectoris, aneurysm, pleurisy, colic, pneumonia, and peritonitis. A worried and anxious look is observed in local peritonits, pneumothorax, large pleural effusions, and edema of the glottis in the early stages. An expression of fright is seen with large hemorrhages, and in acute disorders of hypochondriacal people. A vacant, unmeaning expression is seen in facial paralysis, congenital mental deficiency, deterioration from organic insanities, dementia præcox, and the depressed phase of manic depressive insanity.

2. *Pallor* is seen in carcinoma (yellowish), chlorosis (yellow green), chronic arsenical poisoning, cardiac diseases, especially degenerations, mitral and aortic stenosis, chronic suppurations, chronic mercurial poisoning, chronic lead poisoning, (blue line on the gums), chronic gastrointestinal disease, chronic febrile disease, recurring hemorrhages, leucemia, malarial cachexia, parasitosis, including uncinariasis, nephritis (tallow color), pernicious anemia (lemon color), Hodgkin's disease, syphilis, and tuberculosis.

3. *Redness* is seen in health due to cutaneous hyperemia, from blushing, heat, exercise, and simple hypertrophy of the heart. It is sometimes congenital. Long exposure to moisture, heat, and cold produces a permanent redness, which, when due to prolonged exposure to the sun, is Nature's protection from the actinic rays. The latter redness is seen after "water burn," "snow burn," and continued ordinary sunburn. The Indian of great altitudes is the only true "redman," for here the ultra violet rays are most felt and Nature gives him his redness for protection.

4. *Cyanosis* is due to imperfectly oxygenated blood, and there are four general conditions which produce it, namely: 1. Conditions interfering with the entrance of air into the lungs; 2, conditions which limit the normal excursion of the lung; 3, conditions which inhibit the greater or lesser circulatory systems; and, 4, certain poisons. Under the first come oral abscesses, glossitis, angina Ludovici, retropharyngeal abscess, laryngismus stridulus, simple croup, laryngitis, either acute, chronic, tuberculous, or syphilitic, diphtheritic or membranous croup, traumatism, foreign bodies, laryngeal muscular paralysis, a paralysis of respiratory muscles, pressure on the trachea or bronchi by aneurysm, goitre, enlarged glands or tumors of the mediastinum, spasmodic or bronchial asthma, capillary, fibrinous or plastic bronchitis, bulbar paralysis, peripheral neuritis or poliomyelitis, peritonitis where the diaphragm is paralyzed, epilepsy, tetanus, and strychnine poisoning. Because of the pain which inhibits muscular action, pleurisy, pneumonia, intercostal neuralgia, and peritonitis frequently give rise to facial cyanosis.

Under the second set of conditions come pulmonary collapse, pneumonia in all its forms, edema, tuberculosis, emphysema, pleural effusion, pneumothorax, pericarditis with large effusion, tumors of the thorax, abdominal effusions, and tympanites.

Under the third set of conditions come all the factors heretofore mentioned which take up lung space or produce pulmonary pressure, general cardiac weakness with failure of the right ventricle and the valvular and degenerative diseases which give rise to it, and tumors and effusions which press on the venæ cavæ where they enter the right auricle.

The fourth set of factors comprise poisons, such as the coal tar derivatives, and drugs, like opium and its preparations, which depress the respiratory centres. There are other poisons which chemically alter the blood, such as carbon monoxide, calcium chloride, hydrocyanic acid, and the cyanides and nitrobenzol, producing some degree of cyanosis.

5. *Jaundice.* In true jaundice the conjunctiva is always affected. Icterus is due to obstructive causes, such as gastroduodenitis and catarrh of the ducts. Lodgment of roundworms or stones in the common duct, tumors or scar tissue in the wall of the duct, pressure on the duct by gastric, hepatic,

renal, pancreatic, or omental tumors, aneurysm, enlarged uterus, retroperitoneal abscess, or fecal accumulation may obstruct the duct. Toxic causes may play a part in acute cases by acting on the liver cells or blood corpuscles, as is seen in yellow fever, acute yellow atrophy of the liver, Weil's disease, influenza, malaria, pneumonia, typhoid, typhus, scarlet, and relapsing fevers, pyemia, and poisoning from chloral, chloroform, ether, mercury, phosphorus, potassium chlorate, arsenic, antimony, and snake venom. I have personally observed a marked case of jaundice, with hepatic symptoms and death, following the use of chloroform in an obstetrical case. The cause of death was given as acute yellow atrophy, but I am convinced that the chloroform was responsible, especially since the symptoms extended over a period of four months following the anesthetization and began about four days after it.

6. *Edema and swellings.* The face shares in general anasarca due to cardiac or renal disease, and intrathoracic tumors, emphysema, interstitial pneumonia, and pneumothorax frequently cause edema of the face. Pertussis, measles, erysipelas, dengue, variola, and trichinous disease may cause general or evenly distributed facial swelling. Localized edema may be due to plant poisoning, insect bites, urticaria, angioneurotic edema, exophthalmic goitre, or thrombosis of one of the intracranial sinuses. Alveolar abscess, antrum disease, and phosphorus poisoning may cause enlargement of the superior maxilla, while alveolar abscess and actinomycosis may cause the same symptoms in the lower jaw. A swelling behind the angle of the jaw in front of the ear, and pushing it outward, is usually parotiditis. A soft, tender tumor over the mastoid process means mastoiditis or thrombosis of the lateral sinus, or both. Boils, scurvy, cancrum oris, or anthrax may cause swellings of the cheek or other parts of the face.

7. *Nystagmus,* a very common symptom, is due to an irritation or incoordination of the centres presiding over the ocular muscles. It may be of functional or organic cause, and its commonest origins are in hereditary visual defects, acquired occupational refractive errors (miners' nystagmus), cataract, corneal opacities, and amaurosis. It is seen in chorea, hysteria, neurasthenia, all forms of convulsions and insanities, and in albinos. The symptom is seen with considerable regularity in disseminated sclerosis, neuroglia, and other growths of the crura, pons, or cerebellum, and in Friedreich's ataxia. With less frequency it is seen in hydrocephalus and the late stages of tabes dorsalis.

8. *Pupillary symptoms.* There may be three varieties of iridoplegia; first, loss of response to light or reflex iridoplegia; second, loss of response to accommodation or accommodative iridoplegia (this is unimportant); third, loss of response to pinching of the neck or absent sympathetic reflex.

(a) *Anisocoria,* or irregularity of the pupils, is frequently a symptom of organic disease, although it occurs in persons whose eyes refract unequally and after the local use of mydriatics. Unilateral dilatation of the pupil may be due to optic atrophy, cataract, glaucoma, and other conditions that lessen the transparency of the media. If the pupil of a diseased eye only reacts to light thrown into the sound eye it is certain evidence that the disease is in the optic tract or nerve and that the motor oculi nerve, its connections with the corpora, quadrigemina, and the optic tract of the sound side, are sound and uninvolved. Dilatation of one pupil may be caused by affection of the cervical sympathetic by an aneurysm of the aorta or innominate, by tuberculosis of the apex of the lungs, or by a tumor in the neck. When one oculomotor nerve is paralyzed, one pupil is dilated.

(b) *The Argyll Robertson pupil* is too well known to require description, and is seen in tabes and less frequently in paresis and intracranial syphilis. It is due to fibrous tissue changes in the portion of the third nerve nucleus, which presides over the light reflex.

(c) *Absent sympathetic or skin reflex.* This is most often seen in general paralysis of the insane, but may be due to an old iritis with posterior synechiæ, to atrophy of the smooth muscle of the iris, or to glaucoma.

(d) *Dilatation of both pupils.* This condition is seen in the anemia of the brain which accompanies general anemia, nausea, shock, syncope, and cardiac weakness. Blindness, of course, will always cause it. Cerebral abscess, thrombosis, tumors, or hemorrhage, meningitis, and toxic paralysis are common causes. The pupils may be dilated in functional nervous diseases, such as hysteria, neurasthenia, and trance, but in these maladies they react promptly to light and accommodation. Among the drugs that produce mydriasis are stramonium, strychnine, tobacco, duboisine, hyoscyamus, nitrous oxide, cocaine, holococaine, conium, chloroform, chloral, atropine, homatropine, aconite, and alcohol. Some of these act locally and some constitutionally.

(e) *Contraction of both pupils.* Contraction of the pupils is normal during sleep and in advanced age. They are contracted in iritis and retinitis, and wherever photophobia or congestion of the iris exists. Any bilateral disease of the cervical cord may cause paralysis of the sympathetic dilator fibres; therefore, myosis may be indicative of disseminated sclerosis, paresis, locomotor ataxia, tumor, or hemorrhage of the cord, hemorrhage of the pons, bulbar palsy, disease of the cervical vertebræ, or spinal meningitis. The same conditions in the brain may cause the symptom by irritating the third nerve nuclei. Eserine, pilocarpine, and opium, and its alkaloids are the common drugs that produce contraction of the pupils.

(f) *Unilateral contraction* is an indication in most cases of a serious affection. It may be congenital. Aortic aneurysm may paralyze the sympathetic dilator fibres and produce the symptom. Any unilateral lesion affecting the cervical cord, such as, at times, those of paresis or tabes dorsalis, may cause contraction of one pupil. It may be brought about also by unilateral brain lesions situated in such a way that they irritate one motor oculi nerve or centre.

9. *Ptosis.* This is due to paralysis of the levator palpebræ muscle, which is supplied by the second portion of the third nerve; therefore, the trouble is

in the motor oculi itself, its cortical centre, or its nucleus. Ptosis may simply be one of several obvious symptoms of an oculomotor palsy; it may be congenital, that is, due to the absence of muscle tissue, so that the person cannot roll his eyes upward; transient bilateral ptosis is sometimes seen on waking in the morning in "half sick," overworked people, especially women; bilateral ptosis on attempting to look upward is seen in hysteria, along with other spastic local muscular disturbances. Any drug that reduces the irritability of, or paralyzes nerve or muscle, may cause ptosis. It is possible that conium and gelsemium have a somewhat selective action in producing this symptom. Unilateral ptosis with red edematous skin and a contracted pupil on the same side make a clear picture of sympathetic nerve depression, usually of organic origin. This complex is known as pseudoptosis. Rather infrequently, a one sided ptosis follows an apoplectic attack, while the other branches of the third nerve may be uninvolved.

THE PRINCIPLES OF FREUD'S PSYCHOLOGY.

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The history of psychology has passed three important epochs. The first is known as the metaphysical; during this period the manifestations of the human mind were interpreted from a metaphysical standpoint; indeed, these interpretations varied according to the different conceptions of the individual schools of philosophy. The second period in the history of psychology is known as the *Renaissance*. It was through the efforts of the great German psychologist, William Wundt, that the first steps were taken in the proper direction for the study of objective mental phenomena, and the subjectivity was likewise investigated on purely objective bases. Nevertheless, had it not been for his school, the third or present epoch in the history of mental science would never have been evolved. During this present period the phenomena of the human mind have been studied analytically and synthetically. These investigations were initiated by Charcot, Bernheim, and Janet, and later this subject matter came to a more critical scrutiny by Sigmund Freud, the renowned Austrian psychopathologist.

Freud's psychology is unique. It is highly individualistic--it deals with the experiences peculiar to the individual; these experiences are gauged and interpreted for what they are worth to the individual alone. All mental phenomena, be they normal or abnormal, are determined by definite causes or motives which are either of conscious or unconscious origin. Each individual experience becomes a part of the personality which is influenced according to the intensity of the experience; that is, a painful experience will cause a greater reaction than a less painful one. All forms of mental activity are dependent upon and modified by our past experience, and, as Putnam very thoughtfully remarks, "No atom of our past is ever really lost, and the only question is how vitally it is still active." From the objective point of view, the human mind is composed of three important parts—emotion, volition, and intellection, whose harmonious activity is necessary for the proper adjustment of mental life. Hence the function of the mental organism is the adjustment or adaptation to the environment—the more complex the environment, the more difficult is the adjustment. The underlying phenomenon of mental activity is the *wish to exist from the nutritional and the reproductive standpoint*. These two factors, nutrition and reproduction, form the foundation of all animal life. Deny the animal food, death will result; deny the sexual object, death will likewise ensue. To the simple organism not bound by conventional ties the adjustment between internal and external relations is comparatively easy. However, men who are controlled by civilization, conventionality, religion, and education exhibit greater difficulty in the gratification of their wishes. It must be admitted that the wishes which pertain to nutrition are relatively easily fulfilled. Society is not ashamed of providing food for the hungry, clothing for the naked, and assisting them in other physical wants. But when it comes to the higher psychosexual cravings (I mean love in all its ramifications), one experiences considerable difficulty in curbing such desires. From this it may readily be seen that not all of our wishes are gratified; indeed, if such were the case life would be a comparatively simple task. The very fact that our wishes are not satisfied makes our life so complex, and its complexity bears a direct relation to the intricacy of our conventions. The dynamic forces of mental life present a complicated biological economy.

In order to understand Freud it is necessary to define the conception of repression. This term implies the forgetting of painful or disagreeable experiences, which is usually an unconscious process. These repressions or forgotten experiences do not lie inactive in the unconscious mind, but may affect the personality to such an extent as to bring about a conflict between the conscious and unconscious life of the individual; which may sometimes lead to a nervous or mental breakdown. The following will illustrate this psychological mechanism. Suppose Mr. A. falls in love with the wife of his dear friend, though he realizes that for various reasons his love cannot be requited. There are two methods by which such a situation could be dealt with. In the first place, the normal adjustment would be to allow this experience to continue as a part of his conscious life, and resort to "a normal draining off of the emotion of the exciting process." The other one, the abnormal one, which most of us unfortunately use at times to the detriment of our mental organism, would be to forget entirely the unrequited love affair, and thus make this experience a part of his unconscious life. Our psychoanalytic experience, however, teaches us that ungratified repressed wishes are compensated in one way or another. The compensation may take the following forms: First, there may develop a hatred for the fe-

male sex, especially for married women in the disappointed lover. His attitude will be similar to that of the fox in *Æsop's Fables,* who pronounced the grapes sour because he was unable to reach them. In daily life such behavior is frequently observed—for instance, the old maid is a man hater; the old and feeble scorn the young; the poor man decries riches; the barren woman detests children; the defeated candidate derides the offices; and many more examples might be cited. Second, the repressed wish can be compensated by transferring its affect to another object or subject. The compensatory reaction will surely be guided by the character of the repressed unfulfilled wish. For instance, the unfortunate lover who was disappointed by the married woman may suddenly become interested in matrimonial affairs; he may organize a matrimonial bureau; divorce suits may become the object of his curiosity, and so on. Or he may ultimately find a woman who will be able to fulfill his ideal. Guy de Maupassant's striking story, *Boitelle,* presents such a mechanism. "Father Boitelle (Antoine) made a specialty of undertaking dirty jobs all through the countryside. Whenever there was a ditch or a cesspool to be cleaned out, a dunghill removed, a sewer cleansed, or any dirt hole whatever he was always employed to do it." The story revealed that he had "no heart for anything—anything at all. No trade suited me any longer, and so I became what I am—a night scavenger." Boitelle was disappointed in love—he was not allowed to marry a negress with whom he was deeply in love. Thus his ungratified wish—to marry a negress, who was forbidden him by his parents and by society—found a substitute in the selection of a particular vocation which was likewise dirty and disagreeable to society. Third, there is the insane way of compensating unfulfilled wishes; for instance, the disappointed lover would develop fancies about the married woman; he would imagine that he heard her voice calling him endearing names; or, again, he might develop ideas of persecution, as that he was being followed by her, trailed by detectives, and so on. Such mechanisms occur in various forms of hallucinations and delusions. For instance, one of my patients, an Italian woman, who had lost her child, was seized with a maniacal attack, and continually talked about her deceased child, imagining that she was in Heaven, where she saw her child, whom she held in her arms; in consequence of which she was happy and sang songs. Another patient, a Rumanian, about thirty-nine years of age, maintained that he was under the influence of the Goddess Iede Iededere, whom he had married several years before. Upon analysis it was proved that he symbolized his father. Another patient, a Russian, about twenty-seven years of age, maintained that he heard voices which told him that he could reproduce a generation of good people and that a wife was chosen for him from every country; while in reality he was weak sexually. Another patient, a young Rumanian girl, who had been jilted by her lover, during one of her hallucinatory seizures held imaginary conversation with him, spoke of her marriage, honeymoon, etc. The fourth method of compensation is by means of day dreams or by dreams during sleep. Since dreams occupy such an important part of Freud's psychology, it will not be amiss to refer to the underlying psychological mechanisms.

Since time immemorial, dreams have been of great interest to students of speculative psychology and of philosophy. Even the ancients tried to explain the dream phenomena and, with the advancement of science, various theories have been propounded to account for the genesis and psychology of dreams. It is not within the province of this paper to outline the various hypothetical considerations of dreams. I shall therefore limit myself to Freud's conception of this subject. According to Freud, dreams are not meaningless or absurd, but express definite mental undercurrents and have well defined functions. Metaphorically speaking, the dream is the mirror of the unconscious mind, and when it is thoroughly analyzed one is able to get an inkling of the individual's life. As a general rule, *dreams express a wish fulfillment,* which may sometimes be veiled and only after thorough analysis can be brought to light. In other instances, the dream may represent a compromise between two difficult situations. The dream is highly egoistical. The dreamer dreams of things which are denied him in reality. Such methods of compensation are frequently employed by day dreamers. The poet finds recourse to his fancies; the philosopher gives vent to his theoretical speculation; the scientist resorts to his inventions and hypothetical theories; and, indeed, many others employ similar means of compensation by building castles in the air. Byron's verse is very suggestive:

> Dreams in their development have breath,
> And tears, and tortures, and a touch of joy;
> They leave a weight upon our waking thoughts;
> They take a weight from off our waking toils;
> They do divide our being; they become
> A portion of ourselves, as of our time,
> And look like heralds of eternity.

The psychology of dreams is somewhat complicated, and the following important points must be borne in mind. The dream is the result of two mental forces—one is the wish and the other is the inhibitory force, or the psychic censor which controls the wish. By the psychic censor is meant the inhibitions which are forced upon us by conventionality, religion, and education. It may be compared to the censor in Russia, who accepts those things that are harmless to the government, but rejects such matters as are detrimental to its welfare. This explains why our dreams are so distorted and symbolic; in order to outwit the censor, the dream substance becomes thus masked. All dreams are composed of two important parts, the manifest and latent content. By the former we mean that part of the dream which has an immediate connection with our recent experience, usually an occurrence of a day or two preceding the dream. The latter (the latent content) indicates the innermost wishes which have been repressed and have lain dormant for some time; these repressions are modified by infantile fancies and tendencies, and in some cases intensified by traumatic experience. The experience of the manifest content unconsciously arouses the latent trends and wishes, and causes a dream.

Two other phenomena are of great importance in the dream, viz., condensation (Verdichtung) and displacement (Verschiebung); the former implying the merging of two or more ideas, objects, or words into one mass; the latter meaning the transference of one form of psychic energy into another in order to conceal the true meaning of the dream and furthermore distort the relation between the dream content and dream thought. Dreams are highly individualistic; while it is true that there are dreams which may be interpreted objectively, nevertheless dreams should be carefully analyzed in order to determine their real meaning to the particular person. Ferenzci very thoughtfully remarks:

> It would be an enticing problem to assemble the fragments of dreams which can be explained symbolically and to write a modern dream book in which the explanation could be found for the separate parts of dreams. But this is not possible, for although much typical material recurs in dreams and in most cases can be rightly explained without analysis, symbols may have different meanings with different individuals, and even with the same individual at different times. Accordingly, if we wish to know in any particular case all the determinations of the single dream fragments, there is nothing left for us but painful analysis, for which the investigating power and the wit of the interpreter of the dream alone will not suffice, but the industrious cooperation of the dreamer is indispensable.

Symbolism in dreams serves the same purpose as figures of speech in poetry. The more complex the wish, the more strict the psychic censor, and the more active the human mind, the more symbolic is the dream. There are a few symbols which may be considered fairly characteristic; for instance, the czar and czarina, or the king and queen, are the symbols of parents; the mayor or governor stands for the father, and wood for mother; the prince or princess, or the main actor, for the dreamer; fire for love; animals for animal passion; and there are other objects which may express sexual symbols. Dreams may be divided into three main classes—simple, inconsistent, and symbolic and distorted. Simple dreams are common in children and in people who are intellectually below par. In such cases the wish fulfillment is on the surface. For instance, a child to whom candy was denied during the day because of sickness dreamed at night that she was given bags of sweets. A girl who had a short boat trip one day, and cried with disappointment because of its ending so soon, dreamed at night that she was having a long boat trip over a lake. To this group belong also the so called primitive or physiological dreams. For instance, a man who ate highly spiced food before retiring dreamed that he was quaffing large draughts of cold water and lemonade; another who went to bed hungry dreamed that he was having a bountiful meal. In the inconsistent dreams the wish fulfillment appears paradoxical For instance, a young man dreamed that he was taking an old man to prison in the "Black Maria"; he—the old man—bade his friends farewell, and it appeared to the dreamer that the old man was going away forever. In the analysis it was shown that the old man represented his father; and to him (the dreamer) prison meant death. Why should he wish his father dead? By knowing some of the intimate affairs of the dreamer's life, we can appreciate the consistency of such a wish. The dreamer is an Englishman and an Episcopalian. The girl, of whom the dreamer is so fond that he even seriously thinks of marrying her, is of Irish descent and a Roman Catholic. His father undoubtedly would strongly object to the match, not only because of religious differences, but also because of the national feeling. In the dream the patient removes his father from his way —thus resorting to a childish method of adjusting a difficult situation. To the child death means absence or going away, hence, he takes his father away in order to fulfill his innermost wish. Such dreams are of frequent occurrence, not only in the abnormal but also in the normal, who exhibit a profound attachment for their family; which brings them into conflict with the carrying out of their own wishes.

The symbolic dreams form the most important group, and, indeed, they are the most difficult ones for analysis and interpretation, especially with those individuals who show lack of appreciation for abstract thought. One of my patients, who was very much attached to his sister and at times would have fancies about her, dreamed at the age of twelve that he was Adam and his sister Eve, and both of them in the Garden of Eden. The symbolic wish to marry his sister is quite apparent. Another patient, who was in love with a man whom she later found was already married, in consequence of which she was disappointed in her love and a neurosis developed, related the following dream: "I dreamed that I was dressed in a white dress with a long train, my hair flowing down my back, and I was running as fast as I could up the stairs of the elevated railroad to the platform. People laughed and jeered at the strange sight I presented. There I met an elderly gentleman, with whom I shook hands, boarded the train, and went directly to the City Hall. We then went before a magistrate. Following this we took a train, and we felt happy in each other's company." In the analysis it was demonstrated that the white dress she associated with a wedding gown; the elderly gentleman represented her friend by whom she was disappointed and whom she tried to repress from her conscious life; going to the City Hall meant getting a marriage license; and the journey alone with the man typified a honeymoon. The wish fulfillment in this case is quite apparent. Another patient, who suffered from psychosexual anesthesia, told the following dream: "I dreamed that I was in Scandinavia and walked with a young man through the streets of a village. The streets were unpaved. It appeared as though there had been a shower during the night, as it was awfully muddy and there were puddles. Peasants were clearing the paths. As we were waiting for the paths to be cleared the young man raised a little round, white, wooden basket, about four inches in diameter, and said, 'Here, sip.' The contents were minute seeds and white syrup. When these seeds are pressed they produce milky syrup." The young man was tall and dark. He reminded her of a candidate for mayor; had speaking ability, and was a public speaker. The village was the one where she visited her father, with whom

she indulged in sexual practices. The basket she associated with the vagina, the seeds with chicken ovaries; and the fluid from the seeds meant to her milk from the breast and semen. "Here, sip," meant to her intercourse. In her early childhood she used to play with small girls, and they would suck each other's clitores. This dream expresses the wish for cunnilingus with her father, the idea of which she had cherished all her life.

By means of dream analysis we are enabled to unfold causes and conflicts in the various nervous and mental affections, and to determine the inner workings of the patient's unconscious life; whereas it would be impossible to do so from an objective examination, inasmuch as the patients themselves are not aware of their own repressed feelings.

The sexual theory forms one of the most complicated and difficult chapters in Freud's *Psychology*. Freud's ideas of sexuality are frequently not understood, or misunderstood, by his critics because of superficial scrutiny of the subject matter. It cannot be too strongly emphasized that Freud's conception of the word *sexual* does not limit itself to the *gross sexual*, but embraces a wide scope of psychic manifestations of the sexual life. He employs the word libido, meaning love in the broadest sense, which "naturally indicates sexual desires and longings in all their aspects; this corresponds in its connotation with that possessed by the word hunger to the nourishment instinct" (Jones). Putnam uses the word craving for libido. In this paper it is proposed to refer only to the important underlying trends of the sexual theory. Freud maintains that the sexual life originates in the early period of childhood—the child's sexuality is *polymorphous perverse*, which implies that it is made up of four rudimentary instincts, viz., heterosexual, homosexual, masochistic and sadistic. In this connection it would be interesting to call attention to the characteristic features of infantile sexuality. It is differentiated from that of the adult, inasmuch as it derives the sexual pleasure entirely independent of a sexual object—it is autoerotic. Furthermore, the erogenic zone is not restricted to the sexual organs only, but may extend to other anatomical parts, such as the mouth, lips, breast, etc., and moreover the sexual pleasure is less complex than in the adult. At puberty important changes occur—*pari passu* with the maturity of the sexual organs the psychic content of sexuality takes a different form. Thus the sexual object of the opposite sex begins to attract attention. At this time two important factors of sexual pleasure became manifest, *Endlust*, end pleasure, and *Vorlust*, fore pleasure; the former attended with the act and the latter with the pleasurable excitation produced by the erogenic zones. In the normal evolution the sexual object of the opposite sex persists, that is, the heterosexual component predominates, but the other three (homosexual, masochistic, and sadistic) are repressed, though some of these retain sufficient vitality for adjustment. For instance, we need some of the homosexual instinct to be able to carry on social life with the same sex, and some of the masochistic instinct to endure pain when necessary, while the sadistic component is necessary for the defense of the organism against injurious agents. It is also shown that a part of the sadistic component is an important attribute to the normal sexuality in men and the masochistic in women. Should, by reason of environment or defective training, any of the three components (homosexual, masochistic, and sadistic) fail to undergo the necessary repression, inversion of the instinct may result and, in association with some other complicated psychological processes, the homosexual, masochist, or sadistic is developed.

The psychic energy emanating from repressed sexuality is sublimated—that is, directed in different channels of a nonsexual end which enhance definite social value. The sublimation of the homosexual component is characterized by loathing and morality; the sadistic and masochistic components are sublimated into disgust, pity, sympathy, and allied feelings. In the words of Freud:

> We know a far more purposive process of development, the so called sublimation by which the energy of the infantile wish—excitation—is not secluded but remains capable of application, while for the particular excitations, instead of becoming useless, a higher, eventually no longer sexual, goal is set up. The components of the sexual instinct are especially distinguished by such a capacity for the sublimation and exchange of their sexual goal for one more remote and socially more valuable. To the contributions of the energy won in such a way for the functions of our mental life we probably owe the highest cultural consequences. What are the means that accomplish these very important constructions so significant for the latter personal culture and normality? They are probably brought about at the cost of the infantile sexuality itself, the influx of which has not stopped even in this latency period, the energy of which, indeed, has been turned away either wholly or partially from sexual utilization and conducted to other aims. The historians of civilization seem to be unanimous in the opinion that such deviation of sexual motive powers from sexual aims to new aims, a process which merits the name of sublimation, has furnished powerful components for all cultural accomplishment. We will therefore add that the same process acts in the development of every individual, and that it begins to act in the sexual latency period. We can also venture an opinion about the mechanism of such sublimation. The sexual feelings of these infantile years on the one hand could not be utilizable, since the procreating functions are postponed—this is the chief character of the latency period; on the other hand, they would in themselves be perverse, as they would emanate from erogenous zones and would be the norm of impulses which in the individual's course of development could only evoke a feeling of displeasure. They therefore awaken contrary forces (feelings and reaction), which, in order to suppress such displeasure, build up the psychic dams mentioned above, loathing, shame, morality.

Perhaps a few illustrations will serve to make the idea of sublimation clear. A disappointed lover may sublimate a part of his sexuality by taking up the life work of the monastery. Bachelors or spinsters sublimate some of their sexuality by conferring their love and admiration upon pet animals. Some men and women sublimate in alcoholism, drugs, neurosis, etc. The married woman who is ungratified sexually undertakes special work which fortunately has a definite social or educational value. Yet one must remember that oversublimation may lead to disastrous results, and Freud truly remarks:

> The claims of our civilization make life too hard for the greater part of humanity, and so further the aversion to reality and the origin of neurosis without producing an excess of cultural gain by this excess of sexual repression. We ought not to go so far as to fully neglect the original animal part of our nature; we ought not to forget that the happiness of the individual cannot be dis-

pensed with as one of the aids of our culture. The plasticity of the sexual components, manifest in their capacity for sublimation, may cause a greater temptation to accomplish greater cultural effects by a more and more far reaching sublimation. But just as little as with our machines we expect to change more than a certain fraction of the applied heat into useful mechanical work, just as little ought we to strive to separate the sexual impulse in its whole extent of energy from its peculiar goal. This cannot succeed, and if the narrowing of sexuality is pushed too far, it will have all the evil effects of a robbery. I only venture the indirect presentation of my conviction if I state it as an old story whose application you may make yourself. German literature knows a town called Schilda to whose inhabitants were attributed all sorts of clever pranks. The wiseacres, so the story goes, had a horse, with whose powers of work they were well satisfied, and against whom they had only one grudge, that he consumed so much expensive oats. They concluded that by good management they would break him of his bad habit by cuting down his rations by several stalks each day, until he had learned to do without them altogether. Things went well for a while, the horse was weaned to one stalk a day, and on the next day he would at last work without fodder. On the morning of this day the malicious horse was found dead; the citizens of Schilda could not understand why he had died. We should be inclined to believe that the horse had starved, and that without certain rations of oats no work could be expected from an animal.

There is another fundamental principle in the psychosexual theory, and that is in the nature of the child love for its parents. The child's first impression of sex is received from its parents, foster parents, or others that may take care of it. To quote Freud:

The child takes both parents, and especially one, as an object of his erotic wishes. Usually he follows in this the stimulus given by his parents, whose tenderness has very clearly the character of a sex manifestation, though inhibited so far as its goal is concerned. As a rule, the father prefers the daughter, the mother the son; the child reacts to his situation, since as as son he wishes himself in the place of his father and as daughter in the place of the mother.

The first object love for the child is father or mother, according to sex; later the brother or sister; and still later the love is transferred to somebody else's brother or sister. However, in some cases, the attachment for the parent may be so strong that it is impossible to detach it, and one not infrequently sees men remaining bachelors because they cannot separate themselves from their mothers. In other instances the individual finds his or her ideal as a wife or husband in a woman or man representing the mother or father. In other cases the daughter or son may identify her or himself with the father or mother—that is, take their place. In life we encounter such interesting cases. How many men marry widows with children and consider their married life one of benign happiness? Again, how many young women marry old men for whom they exhibit profound affection and admiration? Why is a stepmother considered so cruel by a stepdaughter, especially by the eldest? The solution of this problem is simplified by the fact that they are each other's rival for the father. I recall the very interesting case of a musician who was the eldest son in the family and whose affection for the mother was reciprocated. At the age of twenty or twenty-two he fell in love with a cousin who was the child of his mother's brother. Owing to unfortunate circumstances he was prevented from marrying her. He felt the disappointment keenly, and unconsciously was forced to find another substitute for his mother. He finally entered into a liaison with a woman probably fifteen years his senior, who, like his mother, had children and a husband. From the latter she cannot obtain a divorce because of religious complications. This woman he adores and worships. He supports her children and is proud of his union. He has become the enemy of many of her former friends who have ridiculed his peculiar attachment for the woman. The great danger lies not only in the attachment to the parent, but even more so in the identification with the parent of the opposite sex. When the son commences to imitate his mother he unconsciously commences to imbibe a certain degree of effeminacy. Thus, we have the "mamma's boy," who eats candy, talks in an affected manner, feels, thinks, and acts like a woman, wears fancy costumes, uses perfume, and, in other words, is a homosexual ideally, if not in reality. The masculine woman may also be understood on the same basis in relation to her father. It would take one too far to dilate further on the manifestations of abnormal love of child for the parent, but suffice it to say that it forms the nucleus of many forms of mental and nervous disease. It will be readily seen that a proper understanding of a child's bringing up is important from the point of view of mental hygiene.

To recapitulate briefly, Freud's contributions to psychology are of infinite value. By his methods we are enabled to penetrate deeply into mental life, which we can study in all its phases and ramifications, be they normal or abnormal. His theories of sexuality are of great importance to the physician, psychologist, and educator. Formerly, the psychological manifestations of sexuality were neglected in our studies. In the field of nervous diseases, such as hysteria, compulsive neuroses, and allied conditions, the psychoanalytical method, as developed by Freud, can be successfully carried out under certain conditions and in cases suitable for such treatment. By the older methods, such as hypnosis, suggestion, or rest cure, it was possible to remove the symptoms, but not their underlying causes. Indeed, the fundamental principle in therapeutics is to remove the cause of the abnormal phenomena. In mental diseases Freud's method has aided us in understanding the psychology of psychotic symptoms, and hence has enabled us to understand the mechanism of functional psychosis. Thus rational prophylaxis can be intelligently instituted. It should be emphasized that no claims are made of curing dementia præcox, paranoid conditions, or other severe mental disease by psychoanalysis. Psychoanalysis bears the same relation to psychiatry that bacteriology does to infectious diseases. Through the aid of Freud's psychology we have obtained a clear conception of the psychopathology of everyday life, wit and humor, mythology and other psychological riddles which were formerly ascribed to supernatural forces or explained by fantastic theories which, as a rule, failed on their practical application. Young as the science is, it has achieved some results for the advancement of our knowledge of human nature.

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ON THE INSTANTANEOUS TRANSFORMATION OF MERCURIC COMPOUNDS TO CALOMEL, AND THE APPLICATION OF THIS PROCESS IN CASES OF MERCURIC POISONING.*

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It has been shown in a recent article[1] that the initial rate of the reduction of mercuric chloride by phosphorous acid in aqueous solution is greater than in one tenth normal hydrochloric acid solution, and that this rate falls off owing to the formation of complex compounds between the mercuric chloride and the hydrochloric acid formed in the reaction. However, after sufficient hydrochloric acid has accumulated, the reaction is accelerated by the hydrogen ions. This accounts for the minimum in the velocity coefficient K.[2] From these observations it is evident that if the hydrochloric acid could be neutralized as rapidly as it is formed, the reduction of mercuric chloride by phosphorous acid would be instantaneous. Since soluble hydroxides or carbonates precipitate mercuric oxide, or basic mercuric carbonate, the action of sodium salts of weak acids, such as acetic or citric, were tried, and it was found that the reduction was greatly accelerated, but was not instantaneous, on account of the presence of the acetic acid set free by the hydrochloric acid and also of the presence of phosphoric acid formed in the reaction mixture. The reactions taking place may be represented by the following equations:

(a) $HgCl_2 + H_3PO_3 = HgCl + HCl + H_2PO_3$[3]
(b) $NaC_2H_3O_2 + HCl = NaCl + HC_2H_3O_2$

However, if the phosphorous acid is first neutralized with sodium bicarbonate in excess, the reduction is instantaneous and quantitative, for the filtrate, after being neutralized with hydrochloric acid in slight excess, gives no reaction for mercury either with hydrogen sulphide or with stannous chloride; these being the most delicate reagents for mercury. The neutralization of the phosphorous acid and its subsequent action on the mercuric chloride are represented by the equations:

(a) $H_3PO_3 + 2NaHCO_3 = Na_2HPO_3 + 2CO_2 + 2H_2O$
(b) $HgCl_2 + Na_2HPO_3 = HgCl + HCl + Na_2PO_3$
(c) $HCl + NaHCO_3 = NaCl + H_2O + CO_2$

or (b) and (c) may be written in one equation:

$$HgCl_2 + Na_2HPO_3 + NaHCO_3 = HgCl + Na_2PO_3 + NaCl + H_2O + CO_2$$

The phenomena observed in these experiments suggested the desirability of testing this reagent (H_3PO_3 or NaH_2PO_3 in an excess of $NaHCO_3$) as an antidote for mercuric poisoning. Preliminary experiments were performed on cats and dogs, and it was found that by administering the antidote from fifteen to thirty minutes after a fatal dose of mercuric chloride had been given, either by mouth or intravenously, the animals recovered and regained their normal condition after about twenty-four hours.

Preparation of the Reagent. The commercial sodium phosphite is chiefly NaH_2PO_3, and should, therefore, be suspended in water at *room temperature,* and treated with a saturated solution of sodium bicarbonate until effervescence ceases and until the solution is perfectly clear. The sodium bicarbonate solution is then added in excess for the purpose of decomposing any acid, as is indicated in the equation combining (b) and (c). The reagent thus prepared may be administered either by mouth or intravenously. The calomel formed in the system due to this reaction may be removed after several hours by means of magnesium citrate.

This reagent is not confined to the reduction of mercuric chloride alone. Any soluble mercuric salt in the presence of chlorine ions will be converted into calomel, provided, of course, the mercurious compound thus formed is also soluble. For example, mercuric nitrate, $Hg(NO_3)_2$, or mercuric acetate, $Hg(C_2H_3O_2)_2$, may be substituted in place of mercuric chloride, $HgCl_2$, in the presence of sodium chloride, NaCl, which is present in the human system, or the sodium chloride may be added initially. The reactions taking place are given below in stages, although they take place simultaneously.

(a) $Hg(NO_3)_2 + Na_2HPO_3 + NaHCO_3 = HgNO_3 + NaNO_3 + CO_2 + H_2O + Na_2PO_3$
(b) $HgNO_3 + NaCl = HgCl + NaNO_3$

The reactions, in case mercuric acetate is used, are as follows:

(a) $Hg(C_2H_3O_2)_2 + Na_2HPO_3 + NaHCO_3 = HgC_2H_3O_2 + CO_2 + H_2O + NaC_2H_3O_2 + Na_2PO_3$
(b) $HgC_2H_3O_2 + NaCl = HgCl + NaC_2H_3O_2$

Great care must be exercised in the purchasing of the commercial phosphite, as this substance is usually impure, for up to the present time it has not been used for medicinal purposes. In a subsequent paper improved methods will be given for the preparation of this compound, as well as further results obtained by using it as an antidote for mercuric poisoning.

*Read before the Yale Chemical Club, Kent Chemical Laboratory, January 24, 1913.
[1]G. A. Linhart, *American Journal of Science,* xxxv, 353.
[2]*Ibidem,* p. 356.
[3]*Ibidem,* p. 355.

HALLUCINATIONS OF HEARING AND DISEASES OF THE EAR.*

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Recently there have come under my observation three cases of hallucinations of hearing associated with disturbances in the peripheral auditory apparatus, in which the hallucinations were the only manifestation of mental disease. In referring to

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the literature I find that this condition, while well recognized by some writers, Kraepelin (1), Wernicke (2), White (3), and others, has been infrequently described. Several phases of the subject are of interest, namely, the peripheral origin of hallucinations, the bearing that disease of the bloodvessels of the brain has upon the development of this symptom, and the influence of heredity. In the first place, recognizing that three theories exist to explain the occurrence of hallucinations, namely: 1. The theory of the cortical origin; 2, the theory of the subcortical origin; and, 3, the theory of the peripheral origin, the association of hallucinations of hearing with aural disease in individuals otherwise psychically healthy, has a bearing on the study of hallucinations as relating to the theory of their peripheral origin. It may be stated in passing that the first two are acknowledged to be the most plausible of these theories.

While in this paper the object is not to discuss at length the various theories advanced to explain the physiological pathology of hallucinations, I cannot escape a reference to some features bearing upon their peripheral origin. While some authors deny that hallucinations are ever of peripheral origin, Tanzi (4) and Tamburini (5), there can be no doubt that irritation of the peripheral sensory organ plays some part in the causation of some hallucinations. Thus, there are numerous examples on record of hallucinations of sight related to diseases of the optic nerve, Briand (6), to injury of the cornea, Nagelli (7), and to chorioiditis with central scotoma, Uhthoff (8). Furthermore, hallucinations of sight have resulted from pressure on the eyeball in alcoholics, a phenomena described by Liepmann (9). Again, electrical stimulation of the acoustic nerve has caused hallucinations of hearing, Jolly (10) and Moravcsik (11). In addition, there are on record a few cases which seem to demonstrate more than an accidental relation between irritation in the sphere of the peripheral apparatus of hearing and hallucinations of hearing. Stein (12) described the case of a man of seventy-eight years, who heard words in association with melodies occurring in the right ear, which disappeared when a plug of cerum was removed. Further examination showed that the psyche of the patient was changed and that he showed symptoms in the nature of a slight *Beziehungswahn*. Stein believed there was a sclerotic senile change in the gray substance of the brain in the region of the word centre.

Klieneberger (13) reported three cases which are sufficiently interesting to cite in abstract. The first was that of a woman of fifty years who suffered with middle ear disease. The right ear drum was retracted and was the seat of a scar. She heard voices of a threatening character. The voices located themselves first in the room and later in the ear. These hallucinations were preceded by various sounds which were in the nature of hissing and the like. There were no other symptoms of mental disorder, and the voices, though at first influencing her conduct, later were disregarded. There was a history of nervous disease in the ancestry. The second case was that of a man of fifty-three, without history of hereditary taint, who, following an accident, suffered from neurasthenic manifestations and later heard voices calling him by name and insulting him. The voices disturbed him, causing depression and disquietude. In one ear the voice was that of a man, in the other of a woman. There were no delusions. There was a catarrh of the Eustachian tubes, and the ear drums were retracted. Under treatment the voices disappeared, though his power of comprehension suffered. The third case was that of a woman of fifty-two with a negative family history who had sixteen years previously suffered from an attack of hypochondriasis from which she recovered entirely. She heard voices and whistling in both ears, later singing in the left ear, then the right, and finally sounds like a harmonica, a trombone, and a phonograph. Melodies and songs of her childhood days which she had forgotten were heard. These were more noticeable when not working and alone. Her actions were uninfluenced by them. She was otherwise, psychically as well as physically, intact, except for a chronic change in the ear drums and catarrh of the Eustachian tubes. All his patients were old people in whom the symptoms indicated a suspicion of disease of the arteries of the brain.

Hudovernig (14) placed on record an interesting case of a lad of eighteen who, besides akoasms, heard unpleasant voices (phenomes) which caused anorexia and insomnia. The patient had a neuropathic history and was himself neuropathic. There was a large amount of wax in the external auditory meatus which impinged upon the ear drum, and after this was removed the tinnitus and hallucinations gradually disappeared. Regis (15) published a report of a case in which the patient, suffering from otitis, first heard simple noises, then hallucinations, and finally delusions of persecution developed. He called attention to the fact that the relation of hallucination and disease of the ear had been already described by Séglas, Bechtereff, and others.

Most of the text books on diseases of the mind and diseases of the ears neglect to mention this subject. However, Kraepelin called attention to the frequency of hallucinations in ear disease, and concluded that there existed some association between the two conditions, and Wernicke stated that in cases of unilateral hallucinations of hearing, which he believed were not rare, there was usually more or less diminution of hearing. He cited a case illustrating this association. Tanzi, who believes that hallucinations of peripheral origin do not occur, looks upon the production of elementary images in consequence of excitation of peripheral nerves such as develops as the result of pressure upon the eyeball, causing luminous objects, or the occurrence of musical sounds in otitis, and hallucinations following galvanism of the acoustic nerve, as perfectly normal occurrences, and outside the domain of psychiatry. There is according to Klieneberger, Forster (16), and Bonhoffer (17), reason to believe that a cerebral arterial sclerosis has an important bearing upon these cases. Apropos of arterial changes in the brain, Ballinger (18) described, as symptoms of arterial sclerosis of the labyrinth, unilateral or bilateral tinnitus, with progressing deafness, impairment of air and bone conduction, dizziness, and, later, hallucinations of hearing. Mc-

Bride (19) refers to auditory hallucinations, such as hearing melodies and human and animal voices, in cases of ear disease in which insanity could not be suspected, while Knight and Bryant (20), on the contrary, describe this association in the insane.

The question arises whether it is proper to speak of these as hallucinations at all, in the strict interpretation of the term. If an hallucination is a perception without a sensory impression, would it not be proper to look upon such phenomena really as illusions, inasmuch as there is actually a sensory sensation always in these cases? However, whichever position we may take, it does not really detract from the importance or significance of the phenomena as indicative of mental disease.

The following cases illustrate several features of this discussion.

CASE I. A woman of fifty with negative family history suffered from fifteen to twenty years with attacks of vertigo and noises in the left ear. About a year before coming under observation at the Philadelphia Polyclinic Hospital in November, 1912, she imagined people were talking about her. She could hear the voices saying, "Slop boy," "Granny," "Grandmother," "Cheese it!" The voices were referred to the school nearby and to the houses of neighbors. She believed that the neighbors incited the boys to annoy her. At first the voices disturbed her, but more recently the voices at times disappeared and ceased to upset her. She talked at times unintelligently to her husband, but otherwise the examination was negative as to delusions, orientation, and other psychic phenomena. She slept well, her appetite was good, and she was able to do her work properly. She had been for some time previous to the onset of the hallucinations deaf in her left ear.

CASE II. A Jewish woman of sixty-five applied for treatment at the Philadelphia Polyclinic Hospital. The family and previous histories were negative. For four years she had heard voices expressing themselves in songs. These songs were those of her childhood days. At first there was only one song, but within a few weeks previous to her coming under observation many songs of her childhood days were heard. These songs were located in her ears, that is to say, they did not seem to emanate from without. While the songs disturbed her sleep and were annoying, they did not affect her conduct of life. There were no other mental symptoms that could be elicited. She complained of general tenderness of the subcutaneous fat, more marked in the arms, over the triceps, and also in the fat of the thighs and sides, suggesting adiposis dolorosa. The examination of the nervous system, as well as that of her heart, lungs, and other organs, was entirely negative.

The examination of the ears made by Dr. George W. Coates showed the following: There was some nerve degeneration accounting for the deafness. There was a slight retraction of the ear drums, and some catarrhal condition of the middle ears. The Eustachian tubes were patulous, and the labyrinths reacted readily to the caloric test, showing that they were functionating.

CASE III. A woman of sixty-nine, whose father and mother died of apoplexy and two sisters of phthisis. Outside of having had a fibroid tumor, which was removed twenty-five years ago, the patient was apparently well until twelve years ago, when she had an epileptic convulsion. She suffered from a number of these attacks until three years ago; since when she had had no attacks whatever. She had had a progressive catarrhal condition of the middle ear, with retraction of the ear drums for several years. Her condition was briefly as follows: There was a marked anterolateral curvature of the spine due to spondylosis rhizomylique. She also complained of pain in the right knee joint and in both hips. Otherwise the physical and nervous examination was negative. An examination of the ears showed retraction of both drums and marked deafness on both sides. There had been for some years ringing and roaring in both ears which progressively increased. In the last few months she had heard voices in her right ear. These voices said over and over again, "Walk in," "Walk in." The voices also said other things, but these she could not recall at the time of the examination. Her mental condition in all other respects was entirely normal.

In all three cases described the possibility of arterial change in the brain must be recognized and especially in the last two patients, whose ages were, respectively, sixty-five and sixty-nine. It is difficult to avoid the conclusion that the nutrition of the auditory centres has been implicated in these cases and that, therefore, they react abnormally to peripheral irritation. While the occurrence of hallucinations of hearing associated with disturbances of the peripheral auditory apparatus does not necessarily indicate the onset of insanity, there can be little doubt that this phenomenon is an expression of an unstable psychic equilibrium and is therefore actually within the domain of psychiatry. A history of nervous disease in the ancestry is usual, and a study of the cases shows a tendency at some time to exhibit neuropathic manifestations.

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1732 PINE STREET.

ERYTHROMELALGIA.

Report of Two Cases, with Cure.

From the clinic of Dr. Otto Lerch, professor of medical diagnosis, postgraduate department, Tulane University.

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Erythromelalgia is described by Weir Mitchell as a chronic disease in which a part, or parts, usually one or more extremities, suffer with pains, flushing, and local fever, which are made far worse if the parts hang down. There are mild cases that do not progress and which may come and go. There are others which exhibit all symptoms to such a degree as to make the disease one of horrible torment. This intractable malady is comparatively rare and little known. Since 1872, when it was first described by Wier Mitchell, only 148 cases, some more or less doubtful as to their diagnosis, have been reported by ninety observers. Many writers maintain that the disease is of greater frequency, especially in its milder forms, but overlooked and unrecognized by the physician. It is with pleasure that I report the following typical cases:

CASE I. Miss A., a young woman, born in New Orleans, had spent the greater part of her childhood in the country. Lived a regular life; of active disposition and regular

habits Performed her usual work of light housekeeping and exercises moderately. Was a healthy, robust, and stout child; escaped all the infectious diseases of childhood, except measles. She gave the history of always suffering from cold feet and had had frequent attacks of chilblains. Father died of tuberculosis at the age of forty-six; mother living and in good health; a brother and sister living, both healthy, but of neurotic temperament. The sister frequently suffered during cold weather from cyanosis of the feet and toes, which was very painful; but she had never been treated for this condition. Most members of her family had been active and long lived, as far as can be ascertained. Her maternal grandmother was hysterical and subject to melancholia; was also a sufferer from so called "chilblain." Until October, 1906, the patient always enjoyed excellent health, but at this time she had an attack of dyspepsia (a feeling of weight in the stomach and heart burn), which was followed a month later by swelling of the feet. They became hot and sore, and so continued off and on until the return of settled warm weather in the spring. During the summer she was not inconvenienced except upon walking and standing with prolonged exposure to the sun or heat, which would cause swelling and a burning sensation. The winter following the attacks were less severe. An erythematous rash appeared early, but the pains were very much less severe, and the symptoms again disappeared in the spring. The winter following the swelling and pain once more made their appearance, but the attacks were of shorter duration, less severe, and no attention was paid to her condition by the patient, as she thought the trouble would gradually wear away. I saw the patient in January, 1908, when she presented the following condition:

Robust and healthy in appearance; weighed 132 pounds; five feet, four inches tall. No expression of pain, no drawn features; nor could it be detected from her appearance that she had not been able, for several preceding weeks, either to wear her shoes or leave her bed, because of the excruciating pains from which she said she was suffering. The thoracic organs were normal; also the abdominal organs, except for a slight right nephroptosis. Pulse full and regular, all superficial arteries soft. Blood pressure, 120 millimetres of mercury; blood normal, both as to hemoglobin and the white and red cells; urine normal. Examination of the nervous system showed some hysterical stigmata, dermographia, and diminution of uvular and corneal reflexes. The feet were swollen to twice their usual size to about one inch above the ankle, where the swelling ended abruptly (forming a distinct line), were covered with an erythematous rash, and had enlarged veins. The first and second toes of both feet were partly webbed, a feature that could be traced in members of the family for several generations. Covering the feet would cause excruciating pain and increase the swelling, and even on the coldest days no heat could be tolerated in the room. The only relief was obtained by allowing ice cold water to flow on the feet for hours at a time, or by massaging the toes, each individually with an upward movement stroke until the patient would have to give up from exhaustion. This condition remained the same, the swelling never disappearing, pains would come and go, first in one foot and then the other, and at times would be felt simultaneously in both. Yet with all this acute suffering, both night and day, the patient, who was very healthy in appearance, was cheerful, never betraying the agony she said she endured. The diagnosis was then made and the case pronounced one of erythromelalgia.

Internal antiseptics, salicylates, and large doses of sodium bromide and valerian were given with no effect, and various astringent preparations were applied locally without benefit. The only relief was found in ice cold water Arsenic, by hypodermic injection, was then tried (sodium cacodylate in full doses was used), and from that time improvement became apparent: the patient could walk, pain and redness disappeared, and swelling subsided, and in a short while she was able to come to the office, where electricity (the galvanic bath to the feet) was applied. During the attacks, all hair on the legs and feet disappeared, but as the improvement progressed it gradually returned. Up to now the patient has continued to feel well. There has been no recurrence of the disease, and she can walk, tolerate warmth in the room, and even cover her feet. There is only some occasional slight flush and some tenderness after excessive fatigue.

Case II. Mrs. B., fifty-seven years of age, born in Louisiana, mother of seven children; lived a sedentary life of rather indolent disposition and took very little outdoor exercise; family history negative. Had two nervous prostrations, one in 1898, following a severe shock, and the other about eight years ago; since which time she traced her present condition. She suffered from pains and stiffness all over the body, and had noticed that her hands and feet often swelled and turned a purplish red color, accompanied by tingling and sometimes burning, especially when she felt nervous. As she herself expressed it: "It was a soreness of the hands and feet which was present all the time."

I saw the patient about three years ago, and she presented the following condition: Obese, weighing 199 pounds; five feet, three and a half inches tall; blood pressure 165 millimetres of mercury; arteries sclerosed, or slightly enlarged; heart sounds pure, with accentuation of the second aortic sound; both kidneys displaced downward; the abdomen pendulous and flabby; urine free. Suffered from constipation; very nervous, with hysterical stigmata. The palm and fingers of the right hand and upper surfaces of those of the left foot showed a scarlet red hyperemia; swollen and painful, with a smarting, tingling sensation. She described the feeling of warmth in the extremities by stating that she was always seeking a cool place to put her affected hand and foot, and uncovering portions of her bed so that she might have a place to spread and cool her limbs. Sudden changes from cold to warm weather increased the pain, redness, and swelling and, as in the previous case, continuous hot weather was not injurious unless preceded by a cold spell. Allowing the hands to hang down would cause a rush of blood to the part, the color becoming more brilliant, the pain more intense, the swelling more pronounced, and, upon raising this extremity above the head, the symptoms would subside and the patient was relieved.

A paper on certain painful affections of the feet, by Weir Mitchell, appeared in the *Philadelphia Medical Times* in 1872, but attracted little attention. In 1878 he named this disease "erythromelalgia," derived from the Greek words meaning "red," "pain," "member," which so graphically describes the malady. This condition was previously recognized and mentioned by Graves in his *Clinical Lectures* in 1848, and again by Sir Thomas Paget in his article, A Case Illustrating Certain Nervous Disorders, in *Saint Bartholomew's Hospital Reports*, 1871, p. 67. Very few cases were described and little was said about the new disease until 1892, when Gerhardt, Senator, and Bernhardt presented cases to the Medical Society of the Charité, in Berlin, in June, 1892, pronouncing it a new malady and recognizing its discoverer, Weir Mitchell. This epochal event in the history of erythromelalgia caused the publication of numerous articles, comments, and reports of cases, and many were the theories advanced as to the cause of this perplexing trouble.

It is the consensus of various authorities on the subject that it is a very rare affection. Oppenheim states that he found only two cases of erythromelalgia in 12,000 patients in his clinic. Osler states that he saw only one case in private practice in which the diagnosis seemed clear, and at the Johns Hopkins Hospital in twenty years (up to 1909) there were only three cases. Although there are about one hundred and fifty cases in the literature, only a few appear typical and bear all the earmarks of the disease. A study of the reported cases shows that the feet are generally the seat of the trouble and that there are about as many women as men affected, which is contrary to the usual opinion; and that the majority of those

afflicted are individuals between twenty and forty years of age.

There are many theories as to the cause of this intractable disease, but even to this date nothing definite and tangible has been advanced to help elucidate its etiology. The rarity of the affliction and the scarcity of autopsies are no doubt the reasons why its etiology and pathology are not better known. At the close of their careful and thorough article on this disease, Lewin and Benda say: "We conclude that erythromelalgia is not a disease *sui generis,* but partly an accompanying syndrome to diseases of brain and spine, or to the neuroses, hysteria and neurasthenia, and sometimes a neuralgia or a neuritis." Weir Mitchell said he had no doubt that some of the cases of erythromelalgia were spinal in origin, but was not at all certain as to the spinal condition; and later said that the typical form is probably a painful nerve end neuritis, with or without coexistent inflammation of the parent stems; probably, too, although the skin may be of normal tint, when the limb is at rest, the deeper tissues are always too full of blood and the temperature supranormal.

Dana in his paper on the Acroneuroses states: "It appears to me after a careful reading of all of Mitchell's cases, and of many of Raynaud's, that these two observers have independently described closely allied, if not identical diseases." Baginsky believes that it affects only the vasomotor nerves. Dehio states that it is an independent disease. Collier reports ten cases, all in connection with diseases of the spinal cord.

Many observers think that it is a disease of the periphery and a malady *per se;* which opinion I am forced to embrace from a study of these two cases. One patient apparently cured for five years (a typical form of the disease), has never at any time displayed any symptoms of organic diseases of the spine and brain, and as for the other, although a milder, but still typical case, I can make the same assertion. Weir Mitchell states that he has known cases of erythromelalgia of milder type, which after twenty years have not become worse or added a single spinal symptom. I think that exposure to cold is the predisposing, as well as the exciting cause, of this disease. It is known that certain agencies, among which is prolonged exposure to cold, have a weakening effect on the involuntary fibres of the tunica media of the arteries. When the extremities are exposed to severe cold we have first contractions of the bloodvessels, which cause blanching of the skin, numbness, and extreme coldness to the touch; then, with the sudden application of heat, the capillaries dilate, the blood rushes to the surface, there is a glow, redness, warmth, and tingling, which gradually subside a short time after the vascular shock. Many cases in the literature on this subject give a history of exposure to cold, and among the most prominent are those of Weir Mitchell, Elsner, Paget, and Osler. Some authors, again, state that their patients had had chilblains some time previous to their first attack of erythromelalgia, as the disease generally comes in spring, in very cold climates, or sometime subsequent to a cold spell, and that exacerbations take place only when there is a sudden change in temperature. In my first case the patient was relieved during either a continuous spell of cold or warm weather, and was affected only when there was a sudden change of cold to warm, or of warm to warmer, as on entering a hot room, putting the feet to the fire, or in summer exposing the feet to the sun.

The pain varies in intensity and character according to the condition of the feet. With the beginning erythema the torture commences; in fact, it comes with the very first flush, which can be relieved by cold weather, or cold application. When the flush subsides and the redness diminishes, although the swelling remains, there is a more severe pain, neuralgic in character, which is persistent and may last for days and nights and can only be relieved by massage, cold applications being of doubtful service.

The clinical picture of this disease, especially in its severe form, is characteristic, and the symptoms so pronounced that it is readily diagnosticated. The color of the affected part varies from a livid, glistening red to a light purplish shade. Then we have the distention of all the superficial veins of the diseased member, the swelling of the extremity, with a puffy appearance but without pitting on pressure, the exaggerated temperature (decidedly high on the affected side), the skin dry and hot to the touch and drawn tightly over the surface, and the most excruciating pains, of which Musser says, "I know of no peripheral pain which is the source of greater agony," the pain which is described by the patient as a sensation of burning, as if the foot were put on hot coals or in boiling water, the erythema and pain which are aggravated if the member is allowed to hang down and relieved if elevated or placed in a horizontal position; the relief afforded by cold and the intensification of the symptoms by heat; all acute exacerbations coming after a cold spell, usually in the early spring months, following a rigorous winter; or, in warmer climates, constant changes of weather, occurring in winter, especially after a sudden rise of temperature from severely cold to hot weather. These symptoms are too vivid, typical, and pronounced to leave any doubt whatsoever regarding the diagnosis.

Erythromelalgia may be mistaken for the following diseases: Raynaud's disease, angioneurotic edema, certain affections of the spinal cord, endarteritis obliterans, peripheral neuritis, and red neuralgia.

It is the universal opinion that erythromelalgia does not yield to treatment, and this is the only point on which the different writers on the subject agree. Weir Mitchell never saw a severe case in which the patient fully recovered, nor is there any on record. A review of the literature will show that these unfortunates will go from one physician to another in the hope of securing relief from their intense agony. It would seem as if every drug in the pharmacopeia had been tried, and that each in turn had proved useless and was abandoned. One would think that vasoconstrictors ought to be beneficial; yet every drug in that group has been tried, and all without effect on the hyperemia, swelling and redness of the parts. All physical means have been tried, including elec-

tricity in all its modifications and different methods of application—static, high frequency, galvanic, faradic, also the x rays, violet rays, etc.; all to no avail. Suggestion has been beneficial in a few cases, especially those cases of erythromelalgia in patients of hysterical and neurasthenic tendencies. Bier's hyperemia, hot air, and the bandage have proved injurious, aggravating the disease, and had to be abandoned. Unlike Reynaud's disease, in the treatment of which atropine is such a valuable drug, this only makes the condition worse, the feet becoming redder and warmer and the pains more excruciating.

The only relief attainable in this malady in nearly all cases is the application of cold to the affected parts, in the form of refrigerants or cold applications, or, as in the case of my patient, allowing ice cold water to flow for hours at a time on the burning foot. In one of the latest articles published on the subject, suprarenal extract is advocated as a curative agent; yet, judging from the frequent remission of symptoms in this affection, the value of the remedy must still be considered doubtful. In the first case, I tried various glandular extracts, including the thyroid and pituitary, and also epinephrin; but in spite of these the disease continued its course without the slightest influence being noted.

Arsenic, acting as a powerful tonic, improving the condition of the blood and circulation, has proved to be valuable. Wendel reports a case that has been materially improved by means of the liquor acidi arsenosi. In the cases reported by me the patients have been entirely cured (so that they are well after several years) by the injection of sodium cacodylate combined with other physiological methods.

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THE PROGNOSTIC VALUE OF THE ARNETH BLOOD COUNT IN PULMONARY TUBERCULOSIS.

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In 1904 Dr. J. Arneth, of Leube's clinic, published the result of his studies on the changes that take place in the nuclei of the neutrophiles during various infectious processes, including pulmonary tuberculosis. He divides the neutrophiles into different classes according to the fragmentation of the nuclei, i. e., those containing an undivided nucleus he places in class 1, those containing two fragments in class 2, and so on. The most important fact that he calls attention to is that during an infectious disease we can foretell the ultimate outcome by a careful study of the nuclei in the neutrophilic cells. The following table he gives as the average normal count by his method:

Class 1	2	3	4	5
5	35	41	17	2

Any increase in the number of cells in classes 1 and 2 is termed a shift to the left. The neutrophiles in these classes Arneth considers as young cells, and he believes that they are not as phagocytic as the more mature cell, i. e., those containing three or more nuclei; therefore, during the course of an infectious disease, a large increase in the cells of classes 1 and 2 would denote a condition where the young neutrophiles predominate. The prognosis in such a condition, according to the theory stated above, would be unfavorable in that the main defense of the organism depends upon cells poor in phagocytic power. Minor and Ringer, in 1911, examined the blood according to Arneth's method with special reference to the changes occurring in pulmonary tuberculosis. As a guide to their work they studied the blood of ten normal individuals, with the following result:

Class 1	2	3	4	5
2.5	18.2	55.6	18.6	5.1

The results they obtained in one hundred cases of pulmonary tuberculosis seem to indicate that the method is of great value as an aid in prognosis.

During my residence at the Montefiore Home Country Sanatorium at Bedford Hills, N. Y., I began an investigation of the blood of tuberculous patients according to Arneth's method, and I believe from my results that we have a scientific means of prognosticating the outcome in this disease. As a preliminary I determined the average count in fifteen presumably normal individuals taken from the various employees at the institution. The following table is the result obtained:

Class 1	2	3	4	5
4	30	45	18	3

The blood of one hundred patients in various stages of pulmonary tuberculosis was analyzed and compared with the normal count given above used as a standard. Wright's stain was employed throughout the work, as it gives a uniform picture, bringing out the nuclei in the neutrophiles clearly. To make the results as accurate as possible two hundred cells were counted in all instances; the smears in the majority of the cases were taken by another member of the staff, so that no prejudice should enter into the calculations. The results obtained may be tabulated as follows:

Type of cases.	Class 1	2	3	4	5
1—15 Normal	4	30	45	18	3
2—35 Incipient	6	40	42.5	10	1.5
3—34 Moderately advanced	10	45	35	9	1
4—22 Advanced	17	50	28	5	
5— 9 Terminal	22	54	21	3	

In looking over this table one sees at a glance the gradual shifting to the left of the nuclear count as we approach from the incipient to the advanced cases, corresponding apparently with the condition of affairs in the lungs and the resisting powers of the patient; in other words, in patients who are doing well the picture resembles the normal count, while in progressing or advanced cases the opposite takes place, i. e., a shifting to the left.

To illustrate how the Arneth count may indicate an improvement or a relapse, I cite the following few cases:

Case I. R. G., female, thirty years old, married, housewife, admitted June 12, 1911, first stage. Two years before admission began to complain of pains in the chest, cough, expectoration, and debility; had blood streaked sputum at times; lost thirty pounds in weight in one year. Pulmonary condition, infiltration at the left apex. Arneth count, June 12, 1911.

Class 1	2	3	4	5
9.5	49	36.5	4	1

Progress of case: Patient gained sixteen pounds, and felt fairly well until October 20, 1911, when the blood showed the following picture:

Class	1	2	3	4	5
	3.5	18	49.5	27.5	1.5

Sputum was negative throughout. Discharged December 10, 1911; disease arrested.

CASE II. E. S., female, fifteen years old, hairdresser. Admitted July 10, 1911, first stage. Eight years before admission was operated upon for empyema. In January, 1911, while in apparent good health, had an attack of hemoptysis, with a loss of about four ounces of blood, followed by debility and shortness of breath; three weeks later had another attack of hemoptysis and began to lose weight. In June, 1911, patient again expectorated blood, and then began to complain of a constant dry cough. Pulmonary condition, infiltration at left apex and base. Arneth count, July 19, 1911:

Class	1	2	3	4	5
	12	49	33	5	1

Progress of case: Patient gained thirteen pounds and subjective symptoms ceased. October 13, 1911, the Arneth count was as follows:

Class	1	2	3	4	5
	4.5	28	54	13	5

Sputum negative; discharged October 8, 1912; disease arrested.

CASE III. S. F., female, seventeen years old, single, operator, admitted July 26, 1911, first stage. Eight months before admission began to cough; had fever and was bedridden for four weeks; while in bed had a hemorrhage followed by severe cough, debility and night sweats. Pulmonary condition, infiltration of both apices and at the left base. Arneth count, July 27, 1911:

Class	1	2	3	4	5
	13	60.5	25	1.5	

Progress of case: Patient gained eight pounds and râles disappeared.

October 10, 1911:

Class	1	2	3	4	5
	5	23.5	51	19	1.5

Discharged June 19, 1912; improved.

These three cases may be taken to illustrate the variations in the Arneth count in favorable cases. The following will serve to show the reverse condition:

CASE IV. F. M., female, fourteen years old, housework, admitted January 21, 1903, second stage. Mother died from pulmonary tuberculosis. One year before admission patient began to cough and had profuse expectoration and hemoptysis; had fever, chills, dyspnea, and debility. Pulmonary conditions, consolidation at the left upper lobe with infiltration at base and at right apex; sputum contained tubercle bacilli. Progress of case: Patient did very well, and lesion showed signs of arrest.

June 16, 1911:

Class	1	2	3	4	5
	8	37	41	12	2

During July, 1911, patient began to show signs of relapse; had fever and hemoptysis; cough returned. On July 31, 1911, the Arneth count showed the following:

Class	1	2	3	4	5
	23	49	24	4	

The patient has not been doing well since.

CASE V. M. Y., twenty-one years old, female, single, embroidery, admitted June 20, 1911, third stage. In the fall of 1908, while apparently well, had a hemoptysis of about half an ounce; felt well after this until February 1910, when another hemoptysis occurred, followed by cough and expectoration. Pulmonary condition, consolidation of left upper lobe with cavities; pleurisy at base; infiltration at the right apex. Arneth count June 21, 1911:

Class	1	2	3	4	5
	22	46.5	28.5	3	

Progress of case: Patient began to gain weight, felt well, and the râles became less pronounced until September 19, 1911, when the blood showed the following picture:

Class	1	2	3	4	5
	6	41	45.5	6	1.5

Patient began taking tuberculin treatment November 17 1911, with 0.00000015 gramme O. T., and stopped October 15, 1912, at 0.005 gramme. The treatment was discontinued on account of repeated rise in temperature and loss of weight. January 30, 1913, patient had lost eleven pounds in weight since July, 1912; had occasional pyrexia; marked extension of lesion on the right side. Arneth count January 30, 1913:

Class	1	2	3	4	5
	33.5	50	14.5	2	

The patient is still under observation.

Some one once remarked that there is nothing so certain about tuberculosis as its uncertainty. Every one working in this branch of medicine appreciates how difficult it is to give a prognosis even in the incipient stage of the disease. How frequently does one see a light case suddenly flare up for no apparent reason, and a fairly well advanced case come to an arrest. Therefore we should take advantage of any means to aid us in forming an opinion concerning the patient's chances. In conclusion, I wish to summarize as follows:

1. The Arneth method of blood examination is a distinct aid in the prognosis of pulmonary tuberculosis.

2. It may be employed as an index in the treatment, by placing us on guard when a shift to the left occurs.

3. The method undoubtedly deserves a more extended trial.

I wish to thank Dr. M. Schaie, senior physician at the Montefiore Home Country Sanatorium, for his aid in the preparation of this report.

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1695 BATHGATE AVENUE, BRONX.

REPORT OF THREE CASES OF CÆSAREAN SECTION.*

BY A. M. HILKOWICH, M. D.,
New York,
Attending Surgeon, Jewish Maternity Hospital; Attending Gynecologist, Gouverneur Hospital Dispensary.

There are absolute and relative indications for Cæsarean section. The absolute indication is met with when the parturient canal is so narrowed that the child, even reduced in size by mutilating operations, cannot be brought through with safety to the mother. The relative indication, speaking broadly, will exist when the accoucheur decides that the abdominal delivery offers better chances for both mother and child than delivery from below. It is largely subjective. In a contracted pelvis, excepting the absolutely contracted, Cæsarean section is usually considered only with a view to saving the life of the child, because we can, by a mutilating operation on the child, such as craniotomy and embryotomy, deliver with reasonable safety to the mother, from below. This relative indication is held to be present in a pelvis the conjugate vera of which is from six and a half to nine cm., the

*Read before the Eastern Medical Society, February 13, 1913.

size of the child being deemed to be prohibitory. If, however, the woman has been examined by questionable hands, or has become exhausted by many hours of labor; if the membranes have been ruptured for a long time or repeated attempts at delivery have been made, Cæsarean section becomes a very risky operation. Pubiotomy should be performed instead. In borderline cases, if the attending obstetrician does not feel that he could deliver a living child from below, and the mother, who is very anxious for a living child, has not been exhausted by labor pains, I believe he is justified in putting the question squarely to mother and father, explaining to them the risks and leaving the dicision to them. When they decide to take the risk, Cæsarean section may be performed under perfect conditions, such as are found in modern hospitals. Thus, Reynolds and Newell, of Boston, even advocate this procedure in women who, owing to their nervous constitution, are unfit to undergo the strain of a hard and prolonged labor.

In the cases I am about to report each patient presented to my mind a distinct indication for the operation.

Case I (History No. 532). Mrs. F. S., age twenty-four, married five and one half years, Rumania. Generally contracted pelvis; para II.

Family history: Negative, husband suffering from some liver trouble.

Personal history: Menstruation began at eighteen years; regular, three days, moderate in amount; had one child, by Cæsarean section, four and one half years ago, at the Lying-in Hospital; no abortions.

Present history: Last menstruation seven and one half months ago; quickening two and one half months ago; applied to the Jewish Maternity Hospital, November 17th. On examination the following was found: Height, small; examination of heart and lungs negative; no edema; breast normal; abdomen, old scar present; uterine contraction; uterine murmur. Head, below; fetal heart sounds 150 and of good quality. Measurements: Circumference, 88 cm.; intraspinous diameter, 23 cm.; intracrestal, 25 cm.; external conjugate, 17 cm.; external oblique, right, 20 cm; left, 20 cm.; diagonal conjugate, 9 c. c.; vagina, small Patient reported to the hospital on February 16th, not in labor. Upon examination the head was found floating; no tendency to descend; could not be made to engage. After due preparation patient was operated upon February 19th.

Operation:—Incision to right of scar, six inches long; omentum found adherent to old scar; separated after ligation; intestines walled off with gauze pads. There was found a bulging area about the size of an orange in anterior wall of uterus, at site of old incision; uterine wall very thin and covered by large plexus of veins, some as large as a pencil. Incision in uterus to left of old scar; protruding membranes ruptured; arm, presenting, quickly replaced; leg grasped, and fetus delivered. Placenta removed. Uterus, sutured; muscle with chromic suture No. III, interrupted; peritoneum with No. 1, plain, continuous; abdominal wall sewed up in layers. A hypodermic injection of a preparation of ergot was given, and repeated in ten minutes. Temperature 98.6° F., pulse 120, respiration 20 before operation. Temperature 99.6° F., pulse 90, respiration 20 after operation. Wound healed by primary union; temperature never above 100.6° F.; patient out of bed on fourteenth day; mother and baby discharged from the hospital in good condition.

Being certain, in this case, that delivery of a living child could not be accomplished from below, it was advisable not to wait for labor pains, which was fortunate for the mother, because, owing to the extreme thinning of the uterine wall and the large plexus of large veins over the site of the old scar, uterine rupture might have taken place, with fatal intraperitoneal hemorrhage. Owing to the suspicious appearance of the Fallopian tubes, it was not deemed advisable to sterilize the woman, although that was her wish.

Case II (History No. 3120). Mrs. F. G., age twenty-four years, Austria, para II.

Family history: Negative.

Personal history: Menstruation began at eighteen; regular and painless; married two and one half years; one year after marriage a full term, microcephalic dead fetus was delivered by version, with great difficulty.

Present history: Admitted to Jewish Maternity Hospital, May 3, 1912, at 5 a. m. Examination of the heart and lungs, negative; general condition, good; rather obese. Measurements: Symphysis to umbilicus, 25 cm.; fundus, 42 cm.; ensiform cartilage, 47 cm.; intraspinous diameter, 26 cm.; intracrestal, 30 cm.; external conjugate, 21 cm.; diagonal conjugate, 11 minus; sacral promontory, very prominent. Head, below dorsal plane, left; heart sounds, good, about 150, to the left and below; presenting part, vertex, above brim. Vagina, moderate size; cervix, dilated sufficiently to admit two fingers. Patient had strong pains for several hours; head not engaged. At 8 p. m. os would admit four fingers; head not engaged; membranes ruptured. 9:30, no progress; head still above brim; no tendency to engage even with strong pain. Cæsarean section performed at 9:40; classic operation. Measurements of child: Weight, 8 pounds, 14 ounces; total length, 50 inches.

In Case II we have a distinct borderline case. This woman was given a good test of labor, even to the extent of rupturing the membranes, but the head refused to come down. High forceps would surely have resulted in the death of the fetus, even if delivery could have been accomplished. The situation was fully explained to the mother and her husband, and both decided on Cæsarean section. With the exception of a slight excess of temperature during the first few days, convalescence was normal and mother and child left the hospital, in good condition, on the seventeenth day.

Case III (History No. 3426). Mrs. R. K., age twenty-nine years, Russia, para II.

Family history: Negative.

Personal history: Menstruation began at fifteen; regular; married seven years; aborted six and five years ago, in third month; two and one half years ago was delivered, instrumentally, of a dead fetus, said to have weighed eighteen pounds. Very protracted convalescence. June 10, 1912. Examination of heart and lungs negative; abdomen large for the period of pregnancy, seven and one half months; fetus in transverse position; head in right iliac fossa; fetal heart sounds, 140, and of good quality. Measurements: Symphysis to umbilicus, 22 cm.; fundus, 34 cm.; ensiform cartilage, 45 cm.; external conjugate, 20 cm.; diagonal conjugate, 10 cm. External version tried without success; woman very anxious for a living child; refused induction of labor; was willing to have anything done to secure the birth of a living child.

Admitted to hospital, July 28, at 10 a. m. Examined at 2 p. m.; two fingers' dilatation of os; breech presenting; labor pains good; membranes ruptured spontaneously at 2:20. The possibility of a still birth was explained to the mother, owing to the position of the child and the flat pelvis, and both parents not only agreed to but begged for Cæsarean section, which was performed at 3:10 p. m. with the usual technic. Mother and baby were discharged in good condition on August 12. Measurements of child, weight, 7½ pounds; total length, 52 inches; biparietal diameter, 12 cm.

In regard to Case III opinions will perhaps differ more on the mode of procedure than in the previous two cases. However, the history of a large child, instrumental delivery with death of fetus, a protracted convalescence probably due to a severe infection, owing to traumatism of instrumentation and the malposition of the child, seemed to call for

Cæsarean section. Had there been a normal vertex presentation, I would have been inclined to give the patient a good test of labor, and delivery from below might perhaps have been accomplished, with the aid of forceps. But, owing to the flat pelvis, the after-coming head would certainly have become impacted, resulting in the death of the fetus. The great insistence on the part of the mother for a living child and the conviction of her husband that, if "she had another dead baby she would surely go crazy," caused me to choose Cæsarean section. An interesting point in this case was the adherence of the placenta, which was removed piecemeal and with great difficulty. This was probably due to the fact that the previous post partum infection had caused a metritis. With the exception of slight uterine bleeding for a few hours, convalescence was perfectly normal.

As to the prognosis in Cæsarean section, Routh, in 1910, collected statistics in Great Britain, comprising 1,282 cases, which show that there has been a steady decrease in mortality. In favorable cases, this is from two per cent. to four per cent. In cases where labor has been prolonged or attempts made with forceps, there is a mortality of thirty-four per cent. and over. The lowest mortality is in cases where the operation is done when labor just began and the membranes are intact, 2.2 per cent. After labor has been in progress for some time, with membranes ruptured, the mortality is 10.8 per cent.

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CHRONIC MEDIASTINITIS FOLLOWING OSTEOMYELITIS OF THE STERNUM:

Report of a Case and Operation.

By H. M. Armitage,
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Chronic inflammation of the anterior mediastinum is usually due to chronic osteomyelitis of the sternum or ribs, and is more common than the acute septic variety. Syphilis and tuberculosis are the most potent factors causing chronic osteomyelitis of the sternum or ribs, and, clinically, the differentiation may be almost impossible. Syphilitic osteomyelitis of the sternum pursues a slow and generally painless course. It most frequently begins in the periosteum as a gummatous infiltration, forming an elastic fusiform swelling. Its presence is associated with marked endarteritis, which so diminishes the blood supply to the bone that necrosis occurs; which, extending to the surrounding tissues, may lead to external evacuation followed by pyogenic infection.

The tuberculous form of osteomyelitis of the sternum presents the same pathological picture as tuberculosis of the long bones of the body, except that the symptoms are not complicated by symptoms of joint infection; but the pathological changes are not always confined to the bone and frequently involve the surrounding soft tissues lying superficial to the sternum, and, less frequently, the anterior mediastinum behind. Tuberculosis of the sternum is always dependent upon infection of the marrow of the bone with the tubercle bacillus. This feature of the pathology is of interest because, as we have seen, the syphilitic form usually attacks the periosteum first and begins as a swelling. The end results of the two forms are so similar, however, that this will not be of any material aid in the diagnosis later in the disease. The tubercle bacillus, having gained access to the bone marrow, causes the formation of miliary tubercles, which arise from proliferation of the connective tissue of the marrow around the primary tubercle. Secondary tubercles are formed, the centres become caseous, and by fusion of adjacent caseous areas, an area of softening is produced in the bone marrow. After the process becomes more extensive, involvement of the bony trabeculæ, with subsequent softening and the formation of a definite cavity in the softened trabeculæ, may persist as a definite sequestrum, surrounded by tuberculous tissue. Rutizky, Ribbert, and others believe that osteoclasts are not necessary for the absorption of bone in the presence of granulation tissue. Certainly, along the lines of osseous invasion in tuberculosis, there is evidence clearly indicating that decalcification and removal of the bone matrix, without the presence of osteoclasts, are in progress. Unlike tuberculosis of the spine and long bones, it frequently follows injury, and is more common in middle aged adults than in children, and is often associated with pulmonary, glandular, or other manifestations of the disease. While the tuberculous process is limited to the sternum or ribs the pain is very slight, or absent altogether, but when mediastinitis becomes established this becomes severe, although the constitutional symptoms are slight in the chronic form under consideration.

The prognosis is bad, and when the disease does limit itself, and recovery takes place, the convalescence is long and tedious. Operation, with thorough removal of diseased bone, and ample drainage of the mediastinum, is the logical treatment. The case about to be submitted is unusual because of the peculiar relationship which appeared to exist between the mediastinitis and a long standing asthmatic condition, and the relief of the asthma by draining the anterior mediastinum.

Case. Woman, aged thirty-eight years; consulted me in July, 1911, in regard to a lump in the lower inner quadrant of the breast. *Previous history.*—Fifteen years ago she had a severe attack of pneumonia and since that time she has suffered continually from asthma. During the past seven years the attacks had been occurring with greater frequency and becoming more severe in character. She had tried every known method of treatment, but was forced to rely upon morphine during the paroxysm, and often received three hypodermic injections before the seizure was broken. *Present trouble.*—In June, 1911, she noticed a small nodule in the left breast. It was not painful, and after the application of poultices it broke, discharging a thick pus. Examination revealed a mass in the lower inner quadrant of the left breast. It was fairly well defined in outline, but the centre was ulcerated and a thin serum exuded from a small opening in the centre of the ulcerated area.

Operation, on December 30, 1911. An incision was made through the mass, and the sternum curetted. The opening was packed with iodoform gauze and free drainage established. It continued to drain freely until May, 1912, when the discharge became much thicker and diminished in

quantity. She began to suffer excruciating pain at the chondrosternal junction, radiating around the border of the sixth rib toward the spine. Operation was again advised and was performed, May 22, 1912. A much wider incision was made at the junction of the sixth costal cartilage with the sternum. The sternum had undergone necrosis in its lower third. The diseased bone was thoroughly removed with rongeur forceps, no effort being made to save the involucrum, since the cavity kept rapidly filling with fibrous tissue and I felt that it would be of no benefit to save it. The anterior mediastinum was entered at the border of the sternum, between the fifth and sixth costal cartilages, the opening being made with the rongeur forceps and gradually enlarged; and while in the majority of instances it would probably be better to trephine through the centre of the sternum and drain, in this case the primary opening led to the border of the sternum and free drainage of the mediastinum was easily established. Iodoform gauze was packed under the sternum into the mediastinum, and the rest of the cavity filled with the same material. The cavity was kept open and continued to drain freely until December 23, 1912. The only treatment during this period consisted in removal of granulation tissue and the application of tincture of iodine to the cavity. After the drainage ceased, healing rapidly took place, and within two weeks patient was entirely well.

The laboratory findings were negative, the microscopical examination of the tissue removed revealing chronic inflammatory tissue, with a slight tendency toward breaking of the basement membrane in the sections which were covered with epithelium. This feature was not marked enough to diagnosticate it as beginning malignancy, and I am convinced from the clinical aspect of the case that the entire process was due to tuberculosis of the sternum. Since the second operation she has had one attack of asthma, but it is impossible to state whether this relief, which has now lasted ten months, will be permanent, and likewise whether the operation relieved the asthma or if it was merely a coincidence that the asthma was relieved at that time.

Prize Essays.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

CXXXIV.—How do you treat muscular rheumatism? (Closed May 15th.)

CXXXV.—How do you treat burns? (Answers due not later than June 16th.)

CXXXVI.—How do you treat cholera infantum. (Answers due not later than July 15th.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short, if practicable no one answer to contain more than six hundred words; and our friends are urged to write on one side of the paper only.*

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of $25 for the best essay submitted in answer to Question CXXXIII was awarded to Dr. W. A. Wallace, of Spartanburg, S. C., whose article appeared on page 1192.

PRIZE QUESTION CXXXIII.

THE TREATMENT OF INFLUENZA, ESPECIALLY IN VIEW OF SEQUELÆ.

(*Concluded from page* 1195.)

Da. Joseph Di Rocco, of New York, states:

In the treatment of influenza one has to deal with a specific, infectious disease, associated with catarrh of the nasal mucous membrane, followed by an unexplainable and complete prostration. The duration of the disease is about one week; but the danger of it is that the person very often neglects to pay any attention to the ailment, and there are apt to develop complications directly traceable to the involvement of the mucous membrane. The complications that one has to guard against are as follows: 1. Pulmonary, in which pneumonia predominates; 2, involvement of the frontal sinus; 3, middle ear disease; 4, antrum disease. Besides the above mentioned complications, the etiology of the disease tells us that mental depression or cardiac weakness may develop. The cases, as usually seen, can be divided, because of the respective predominating symptoms, into: 1. Catarrhal; 2, nervous or cephalic; and, 3, abdominal.

The treatment of the disease is expectant and supportive, and by far the most important point is to make the convalescent stage complete. No prophylactic measures can be taken, but it is believed that five grains of quinine every night will prevent an attack. When once established, because of the nature of the disease, one can institute some prophylaxis by isolating the patient as much as is convenient and disinfecting the discharges from the nose and throat by any of these means: Formaldehyde, 1 to 40; mercury bichloride solution, 1 to 1,000. The patient usually sends for the doctor because of the pains and the general malaise. During the invasion a hot bath followed by ten grains of Dover's powder, or a hot lemonade, will often relieve.

As to the general management of the case: Place the patient in a room, well ventilated, with a temperature of about 70° F. He must stay in bed for two or three days. The diet should be a light one, such as soups, milk, possibly koumyss if there is any disinclination toward milk. Later on, eggs, soft boiled. When the irritability of the stomach has settled down, give small quantities of food, but repeated oftener. Such foods as beef juice or extracts should be avoided. There is a marked tendency to a good deal of gastrointestinal irritation. For the bowels, at the beginning give a strong dose of calomel, followed by a saline. During the course of the disease be careful in the use of cathartics. The most distressing symptom in most cases is coryza, and as the inflamed mucous membrane serves as the starting point of the various complications, one has to be very careful to relieve and overcome the condition. The coryza can be relieved by several methods: 1. Warm saline irrigation through the nasal passages; 2, irrigation with a solution of this type:

℞ Sodium bicarbonate, } .....āā ʒii;
Sodium borate, ... }
Glycerin, ...ʒiv;
Phenol, ...♏xxx;
Water, q. s. ad.....℥xvi.
M.

3. The application of a two per cent. solution of cocaine; this relieves pain due to involvement of the frontal sinus and also the plugging of the nose; 4, spraying with adrenalin solution, one in 10,000. The careful treatment of this symptom accomplishes a good deal in preventing any involvement of frontal sinus, middle ear, and antrum. For the pains and

general malaise: Ordinarily these are not affected by doses of quinine. The coal tar products, such as acetphenetidin and acetanilide, answer the purpose; and they seem to act better in small than in large doses. Of course, the objection to using these is the danger of depression; but when they are given in various combinations, and with moderate doses of quinine sulphate, the depression is minimized. This combination I find to work very well:

℞ Acetanilide, ...gr. ii;
Citrated caffeine, ... } .....āā gr. 1;
Monobromated camphor, }
Quinine sulphate, ...gr. ii.
Made up in capsule and given every four hours.

For the headache: Generally the coal tar products relieve the condition. Quite often the application of cold to the head will suffice. When due to nervousness, I give these two drugs in combination:

℞ Sodium bromide, ...gr. xx;
Sodium salicylate, ...gr. x.
M.

Quite often the headache may be frontal in type and is due to congestion of the frontal sinus; the treatment of the coryza, as described, will relieve the pain.

During the progress of the case, if the temperature remains high and is not affected by the administration of the coal tar products, I give Liquor ammonii acetatis, in half ounce doses, every four hours. Cold sponging is often disagreeable to the patient, but in case of pulmonary involvement, with high temperature, I resort to that method in reducing the fever. Quite often there is a cough to contend with. If mild, it can be controlled by inhalations, using such ones as: 1. Oil of turpentine; 2. compound tincture of benzoin; 3. inhale from a sponge containing a mixture of chloroform, alcohol, and creosote, ten minims of each. If very bad and obstinate, I resort to drugs, such as heroin, 1/12 grain, or codeine, ⅛ grain, every two or three hours Insomnia can be relieved by trional, twenty grains, and codeine, ¼ grain. Stimulation in any form is seldom called for; but one must remember—and this is very important—that the administration of strychnine during the course and convalescence is an ideal way of combating the depression and cardiac weakness. I give it as strychnine sulphate, 1/40 grain, every four hours. With the digestion much improved, the patient can take concentrated nourishment, and some form of alcohol (light wine, etc.) with meals. A very good tonic to give after the convalescent stage is established is the elixir of the phosphates of iron, quinine, and strychnine in two drachm doses after meals.

Dr. A. Delcourt, Jr., of Schriever, La., observes:

The treatment of influenza, especially in view of the sequelæ of the disease, is best considered if for practical purposes we recognize three distinct types of influenza, which we may classify as those affecting the respiratory tract, the digestive tract, and the nervous system. While we are called upon at times to attend a patient who belongs markedly to one of these three types, there are, however, symptoms common to all, with which we have to deal even before a distinction can be made. In all cases there is fever, varying from 101° to 104° F.; sometimes remittent, with chills, and sometimes quite protracted. Always there is a very bad taste in the mouth, coated tongue, nausea, severe headache, and muscular pains.

To relieve these symptoms, common to every beginning attack of influenza, we give an initial dose of calomel, followed by a saline purgative. Acetphenetidin, 0.20 gramme, and citrated caffeine, 0.06 gramme, with sufficient sodium bicarbonate to make a powder, are administered every two or three hours; followed by a little hot toddy and lemon. At this stage also a hot foot bath with mustard will be effective in reducing the temperature, allaying pain and restlessness, and making the patient more comfortable. With the fall of the temperature, and preferably given in the morning, a stiff dose of quinine (from 1 gramme to 1.50 gramme) will often abort the attack.

Following the coryza and laryngeal cough, the inflammation may extend to the large bronchial tubes, and even reach the finer tubes, with resultant cyanosis and even asphyxiation; or, as the result possibly of mixed infection, we may have the complication of influenza, so dreaded both in the young and old, the "influenza pneumonia."

To these different manifestations of a morbid process, different remedies apply. Here is a prescription, useful in bronchitis when expectoration is scanty.

℞ Ammonium chloride, ...4 grammes;
Tincture of hyoscyamus, ... 2 c. c.;
Compound syrup of squill, ...16 c. c.;
Syrup of ipecac, ... 8 c. c.;
Syrup of wild cherry, } .....āā 20 c. c.;
Syrup of seneca, ... }
Water, sufficient to make .....180 c. c.
M. Sig.: Tablespoonful every two or three hours.

In cases resembling capillary bronchitis counter-irritation is promptly applied all around the chest, sides, and back by means of a large, but thin, flaxseed meal poultice, sprinkled over with a teaspoonful or two of powdered mustard, and applied as hot as can be borne. The poultice is covered with oiled silk and is kept in place until the skin is thoroughly reddened; to be repeated *pro re nata*. But for the taste, this is a most valuable prescription:

℞ Potassium iodide, ...0.12 gramme;
Ammonium carbonate, ...0.18 gramme;
Citrated caffeine, ...0.05 gramme;
Syrup of wild cherry, } .....āā 2 c. c.
Syrup of tolu, ... }
M. Sig.: Teaspoonful every two hours.

Oxygen may be tried in extreme cases, and has proved of some value.

Whenever influenza pneumonia supervenes the patient is put at once in an oiled silk jacket. At the beginning a mixture somewhat on this style is prescribed:

℞ Ammonium bromide, ...0.20 gramme;
Tincture of hyosyamus, ...gtt. 3;
Tincture of aconite, ...gtt. 2;
Compound syrup of squill, ...1 c. c.;
Spirit of nitrous ether, ...0.50 c. c.;
Syrup of wild cherry, ... 4 c. c.;
Water, sufficient to make .....15 c. c.
M. Sig.: Tablespoonful every two hours.

When there is any evidence of asthenia good results are obtained from small and often repeated doses of champagne, to be supplemented if necessary with strychnine sulphate in doses of one or two milligrammes every four hours. Digitalis is brought into play with caution, and overstimulation

carefully guarded against. Toward the end, with the appearance of râles and the fall of the fever the following prescription is substituted for the one given above:

℞ Ammonium chloride, ...0.30 gramme;
Compound syrup of squill, ...1 c. c.;
Sodium benzoate, ...0.30 gramme;
Syrup of wild cherry, ...4 grammes;
Water, q. s. ad.....15 grammes.
M. Sig.: Tablespoonful every four hours.

Disturbances of the digestive tract, in addition to the initial dose of calomel, are treated with intestinal antiseptics. We have found the aromatic sulphuric acid, so much employed in former years, to be superior to salol or sulphocarbolate of zinc, and to make an almost ideal combination in the following mixture, when we are confronted with frequent, foul smelling, and watery stools:

℞ Bismuth subnitrate, ...16 grammes;
Bismuth subgallate, ...4 grammes;
Deodorized tincture of opium. .....4 grammes;
Aromatic sulphuric acid, ...6 grammes;
Simple syrup, ... 45 c. c.;
Water, sufficient to make .....180 c. c.
M.

When we are not facing a typhoid condition which would call for every sort of stimulation resorted to under similar circumstances, the patients in which nervous troubles predominate (where there is restlessness, insomnia, delirium, even), are very generally benefited by giving jointly one gramme of potassium bromide and fifty centigrammes of antipyrine every three hours, or oftener.

A few words now as to the sequelæ of influenza from the viewpoint of the treatment just outlined. Patients, whether seemingly suffering from a slight or a severe attack, should be rigidly confined to bed, where they must remain, when you can persuade them to do so, until there is good reason to believe that there is no further danger of complication or of relapse. They are given at frequent intervals small quantities of easily digested but nutritive food. I insist especially on milk, boiled, peptonized, or malted; or in the form of milk punch, with a little good brandy or whiskey. Nothing is done which may lower the vitality of the patient, who is already debilitated out of proportion to the intensity of the fever. And let me say here that I have never seen, either in children or adults, any untoward effects from the careful administration of acetphenetidin or antipyrine when pure, but rather the most beneficial results in the way of restfulness, well being, and the production of a sleep which is peaceful and strengthens rather than weakens the patient. As a reconstructive tonic, given both during the acute stage and during convalescence, in addition to the symptomatic treatment, we cannot praise too highly this formula:

℞ Fluid extract of cinchona, } .....āā 12 c. c.;
Fluid extract of kola, ... }
Fluid extract of coca, ... 10 c. c.;
Tincture of nux vomica. ..... 24 c. c.;
Tincture of cinnamon, ... 15 c. c.;
Syrup of orange peel, ... 45 c. c.;
Aromatic elixir, sufficient to make.....240 c. c.
M.

It is a powerful tonic preparation and will best prepare the invalid or convalescent for further tonics of iron iodide, codliver oil, and creosote, or whatever will be best adapted to restore the patient to complete health.

Therapeutic Notes.

Treatment of Hemorrhoids.—Kemp, in the recently issued second edition of his textbook on *Diseases of the Stomach, Intestines, and Pancreas,* recommends the following sedative ointment for prolapsed internal hemorrhoids:

℞ Extracti opii, ...ʒss (2 grammes);
Cocainæ hydrochloridi, ...gr. x (0.65 gramme);
Mentholis, ...gr. xx (1.3 grammes);
Unguenti zinci oxidi, ...ʒi (30 grammes).
M.

Where there is bleeding from external piles, styptics can be applied in ointment form; where it is from internal hemorrhoids, an ointment can be introduced with the finger or applicator, or a suppository used. The following combinations are useful:

℞ Unguenti acidi tannici, ...ʒiv (15 grammes);
Unguenti stramonii, }
Unguenti belladonnæ, } .....āā ʒi (30 grammes).
M.
℞ Glandularum suprarenalium siccarum,
gr. v (0.3 gramme);
Olei theobromatis, ...ʒss (2 grammes).
Fiat suppositorium No. i.

An ointment or suppository containing chrysarobin has also been advised for the treatment of hemorrhage from piles:

℞ Chrysarobini, ...gr. xv (1 gramme);
Extracti belladonnæ foliorum,..gr. v (0.3 gramme);
Iodoformi, ...gr. x (0.6 gramme);
Petrolati, ...ʒss (15 grammes).
Fiat unguentum.

Recent fissures complicating hemorrhoids may at times be cured without operation. The fissure can be touched with a silver nitrate solution varying in strength from ten to thirty grains (0.6 to two grammes) to the ounce (thirty grammes) of water every two or three days; on the alternate days a five per cent. cocaine solution can be carefully applied (a few drops only); or, the following ointment can be alternated with the silver application, or substituted for a time:

℞ Hydrargyri chloridi mitis, ...gr. xv (1 gramme);
Opii pulveris, ... }
Extracti belladonnæ } .....āā gr. v (0.3 gramme);
foliorum, ... }
Petrolati, ...ʒss (15 grammes).
Fiat unguentum.

Calcium and Gelatin Injections.—Müller and Saxl, in *Therapeutische Monatshefte* for November, 1912, state that although the giving of calcium salts by the mouth is attended by a diminution in their therapeutic activity, subcutaneous administration has not as yet been practicable owing to the untoward local effects frequently resulting. To avoid these a solution of the following composition has been recently used by the authors:

℞ Calcii chloridi, ...gr. xv (1 gramme);
Gelatini, ...gr. xxx (2 grammes);
Aquæ destillatæ et sterilisatæ,..ʒiiss (10 grammes).
M. ft. solutio.

From five to seven cubic centimetres of this preparation are heated upon a water bath, then cooled—but not to the point of solidifying—and injected in the gluteal region. Slight local pain is experienced for ten or twelve hours and the skin may become red, but no abscess or tissue necrosis ever results.

This procedure is indicated in all cases where the

administration of calcium chloride by mouth proves ineffectual. In cases of severe hemorrhage into the skin, hemophilia, and duodenal ulcer treated by the authors, a single injection was sufficient to arrest the bleeding. Three cases of exophthalmic goitre and one of bronchial asthma were also greatly benefited. The mixture was introduced into the pleural cavity after paracentesis had been performed the second time in a case of tuberculous pleurisy; the fluid did not reform.

Treatment of Chronic Urticaria and of Senile Pruritus.—E. Bäumer, in *New Yorker medizinische Monatsschrift* for August, 1912, is credited with the statement that lasting benefit may often be obtained in chronic urticaria by giving a five per cent. solution of calcium chloride, flavored with licorice or mint, in doses of one tablespoonful three times daily. Menthol taken internally in pill form is also not infrequently of value.

In senile pruritus, Bäumer advises the following mixture:

℞ Acidi sulphurici diluti, ...♏lxxv (5 grammes);
Syrupi rubi ideæ (N. F.), ...℥i (30 grammes);
Aquæ destillatæ, q. s. ad.....℥vi (200 grammes).
Fiat mistura.
Sig.: One tablespoonful every two hours.

Treatment of Parasitic Skin Affections.—J. W. Van der Valk, in *Semaine médicale* for January 29, 1913, is credited with the statement that although effectual measures are at present available for the treatment of tinea favosa, tinea circinata, and tinea versicolor, we are less well equipped in the case of pityriasis versicolor, erythrasma, and eczema marginale, for recurrence takes place as soon as the usual rubbing with green soap, application of sulphur and salicylic ointment, and painting with tincture of iodine are discontinued. In these conditions the local use of formaldehyde seems indicated, both because of its marked destructive influence on the causative organisms and its property of arresting excessive perspiration. In an obstinate case of erythrasma, washing the lesions twice daily with a ten per cent. formaldehyde solution resulted in their disappearance within four days, and there has been no return of the trouble in two years. Similarly, in a case of extensive pityriasis versicolor of ten years' standing, in a young woman, cure was obtained in a week. The solution should be applied in the morning rather than at night, in order to avoid irritation of the ocular and nasal mucous membranes through its evaporation during the latter period.

Treatment of Postanesthetic Intoxication.—Chauvin and Œconomos, at a meeting of the Société de Thérapeutique of Paris (*Presse médicale*, December 18, 1912), made the assertion that during anesthesia the reserve of glycogen in the system is rapidly consumed, and that if this supply were replenished by the administration of glucose to the patient, the possible harmful consequences of anesthesia could be in a large measure avoided. The liver deprived of glycogen is placed at a disadvantage in the performance of all its functions, and since it is the province of this organ to overcome intoxication, carbohydrate material should be supplied in order that inefficiency in this direction may be avoided.

The authors administer glucose as prophylactic in the following form:

℞ Glucose, ...℥v (150 grammes);
Tincture of nux vomica, ...♏viii (0.5 gramme);
Tincture of cinnamon, ...♏xlv (3 grammes);
Water, enough to make .....℥x (300 c. c.).
M.

Vomiting is not only not increased by the ingestion of the mixture, but subdued.

Where postanesthetic intoxication is already established, glucose should be freely administered by mouth, rectum, and even intravenous injection. As in diabetic coma, alkalies should also be given.

Treatment of Trifacial Neuralgia.—H. Crenshaw, in the *Therapeutic Gazette* for December, 1912, reports a case of trifacial neuralgia of fourteen years' standing, which had resisted all the usual remedial means, including resection of the sensory root of the nerve and the injection of cocaine, in which subcutaneous injections of quinine and urea hydrochloride brought apparently permanent relief. Quinine, codeine, and coaltar analgesics had been tried by mouth without noteworthy benefit. A sterile hypodermic syringe with a long needle was filled with a sterilized one per cent. solution of the quinine and urea salt, the needle inserted near the ala of the nose, and slipped upward beneath the skin for about an inch. A series of small injections was then made, the needle being gradually withdrawn, and the needle then reinserted over the infraorbital foramen and slipped upward as before, after which another series of small injections was made. The infraorbital region was finally gently massaged. In forty minutes complete relief was experienced. Three more injections were later given, at intervals of two, four, and seven days, respectively. After the fourth injection there was no return of the neuralgia.

Relief of Tinnitus Aurium.—W. C. Braislin, in the *Transactions of the American Otological Society* for 1912, states that tinnitus due to inflammatory conditions of the Eustachian tube yields more rapidly and permanently when applications of silver nitrate are made in the tube than when other measures are alone used. He now resorts to this procedure systematically in cases of tubal catarrh, chronic otitis media, and combined middle and internal ear disease. After the ordinary catheter inflation, but before removing the catheter from its position, a small cotton pledget, twisted on a flexible wire applicator, is dipped in the silver solution:

℞ Argenti nitratis, ...gr. xxiv (1.5 gramme);
Aquæ destillatæ, ...℥i (30 grammes).
Fiat solutio.

and carried through the lumen of the catheter into the Eustachian tube for the distance of one quarter to one inch, the patient meanwhile swallowing, if necessary, to facilitate its passage. The application having been made, the wire is at once withdrawn. Where the tube is acutely inflamed, the silver causes a sharp sensation of pain, but this is only temporary. The procedure can be carried out daily, if desired.

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EDUCATION AND MEDICINE.

To the teacher of medical students and to earnest members of the profession who have at heart the welfare of medicine as the noblest of all the professions it has long been obvious that a large number of those who seek to enter our ranks are educationally either unfit or ill equipped. In a recent paper Professor J. George Adami, of Montreal, (*New York State Journal of Medicine*, May, 1913) arraigns mercilessly the defects of the modern methods of conducting and controlling elementary education. He brings his masterful analytical powers to bear on the question, selecting the laws and methods of New York State as an exemplification of such methods, and shows that through all of its ramifications the present system does not make for *education* in the true sense of the word, that of drawing out of the individual the best that is in him; but that, on the contrary, the system is one especially designed completely to stifle all ambition, initiative, or originality that may be latent in a youth. This it does by its slavish and deadly adherence to the dictum of absolute uniformity in requirements—to the hour and unit count system—compelling each candidate for medicine, either as a student or as a graduate seeking a license, to comply with each single requirement, wholly regardless of his mental capacity or of the excellence of his educational qualifications. The hour and unit system is inflexible and tends to the unification of instruction, to the production of "poll parrot" knowledge; it forbids thought and the exercise of the reasoning faculty; it is verily *instruction*, and in no sense education. And the worst of it all is that by its diabolical uniformity it forbids the advancement of the bright student, making him wait for the average, and thereby tending to suppress his initiative and ambitions. "It means that at the conclusion of the school course every individual has one common set of ideas. If there be individuality among the scholars, the State has done nothing to foster, but on the contrary everything to discourage it. It means that we are drifting to a Chinese civilization, with official arrest of all initiative."

As a remedy for this stifling of initiative Adami says:

> Demand, I would say, that every entrant to the university have a complete knowledge of a definite schedule of subjects; nay, I would say, demand a higher standard than that at present in vogue, but *do away with this deadening system of compulsory periods.* Encourage the rapid promotion of the intelligent boy: encourage him to rise rapidly through the secondary school: give him the time to spend two years in the arts department of a university. . . . It is a matter well worthy of debate whether, in place of a matriculation examination on the part of the universities, there should not be a "leaving" or "abiturient" school examination controlled by the State, an examination which youths should be invited to undertake, not when they reach a particular age, or when they have accomplished a given number of periods, but when they have gained the requisite knowledge. Such an examination would afford a standard test of the teaching afforded by the secondary schools throughout the State, a standard to which they should raise themselves, and certainly, as I have already noted, it should include some test of the candidate's intelligence as distinct from his memorizing ability. Let me sum up here, as regards school and university training, that it is contrary to common sense to appraise the tree by the amount of manure with which its roots have been dressed and the number of times it has been watered; it is rather more usual, as it is more sane, to estimate its value by the crop it produces.

With all of Adami's contentions we are perforce compelled to agree, for they are but statements of the painful truth. As to his suggestions for their remedy, though we are not quite ready, perhaps, to accept them as the only means by which the desired end may be accomplished, we feel that as the fruit of profound thought, based upon a clear understanding of the conditions, they deserve the serious attention of the entire profession—and more, of those who have primary and secondary educational matters in their hands.

SUMMER RESORT SANITATION.

An investigation conducted by the New York State Board of Health in 1911 disclosed the fact that of 377 summer resorts inspected by it, 257 had little or no sanitary provision for the accommodation of their guests. This is especially notable when it is considered that these places cater almost exclusively to individuals from the larger cities,

where the most approved sanitary conveniences are prescribed by rules to which the local health laws allow few exceptions. That these individuals should be willing to spend, or have their families spend the summer months in such places, under the guise of a search for health—when the best privy accommodation, at least from the standpoint of comfort, is, perhaps, the open vault variety, and when the water supply, in cleanliness, at least, would compare unfavorably with the waste water of their city homes—is inexplicable. It seems that if a summer resort fulfills the gastronomic and social requirements of its guests nothing more is required of it. Yet when the physician is consulted, as he so frequently is, as to the best place to which to go, only the health and sanitary aspects should be considered by him. He should, therefore, have more than merely a vague idea of the physical conformation of the country to which he is advising his patients to go. He should be possessed of a definite knowledge of the climatic conditions, and especially the sanitary provisions made for the accommodaton of the summer population; else he should confess his inability to give any advice on the subject at all.

In a recent supplement to the reports of the United States Public Health Service, Dr. William C. Rucker, of that service, called attention to the danger of contracting typhoid fever in summer resorts, and even went so far as to formulate rules for the avoidance of typhoidal infections, for those who must make their yearly pilgrimage to these places. The yearly autumnal increase in the typhoid incidence in large cities having a protected water supply is largely due to importations by returning summer resort patrons. Part of the responsibility for the typhoid fevers thus contracted rests on the shoulders of the physicians who are ignorant and have not made it their duty to find out whether the resorts are sanitarily conducted, and to advise against those which are not. For after all, the practising physician is *the* modern sanitarian. He must impress the knowledge on his patients, and in this way on the community at large. Without the cooperation of the public, gained through the influences of the physician, the finest and most highly organized sanitary authorities can do nothing. On the other hand, the boards of health should lay a strict quarantine against places operating as summer resorts whose sanitary provisions are not adequate. It is a pleonasm to say that an establishment which caters to a large number of persons for profit should be compelled to protect them against disease. It should have a properly protected water supply, a proper and efficient means of sewage disposal, or else be closed as a public nuisance. The mere installation of modern plumbing fixtures in the house, without means of disposal of the sewage after it leaves it, is not adequate. It is, so to speak, only plumbing in a glass case. Nor is a lake resort which draws its water supply from the very water in which the people bathe, into which the kitchen and laundry waste is directly run, and into which the sewage has no difficulty in percolating through the soil, in the short distance from house to lake, a sanitary place.

It is quite within the "police power" of the State to license every summer resort so that it can carry on its business only on condition that it fulfills specified sanitary regulations laid down by the State health authorities, and confirmed by periodic inspection. The legality of these requirements under "police power" comes from the fact that they are necessary for the "health, welfare, safety, and even convenience" of the public in general, or even of a class of the public. A court has already decided that a municipality which is an "agent of the State" is liable for typhoid fever contracted by allowing the water supply to be contaminated.

FATIGUE AND EFFICIENCY.

The manufacturer of to-day when buying machinery or hiring assistants has but one thought that stands out preeminently, and that is efficiency; Can the machine or the man perform the allotted work at a speed that will make good the investment? If not, neither will be made use of. In whatever direction we turn, this matter of efficiency is the one question that seems to await an answer. But is that all that is to be considered? There is, undoubtedly, another side, one that can be understood fully only by the physician. This is the element of fatigue, that must enter into all considerations of the human machine. It is when the working person appears on the scene that the importance of the relation between fatigue and efficiency is apparent. Every physician knows from personal experience how close is that relationship, but the medical profession, unfortunately, has not realized that here is a field peculiarly adapted to its ministrations.

Can the worker be an efficient citizen when the labor is such that he or she is so fatigued as to fall a victim to disease or to degraded environment? The matter must not be looked at from the point of view of an eight or a ten hour day. That is not the domain of the physician; he cannot give an answer in dollars and cents as far as the employer is concerned, but he can take the broad point of view of the effect which all this has on the pres-

ervation of a normal standard for the human race. The great mass of the community are the workers, not of the hands alone, but of the brains as well; consequently what involves their health and sanity must have a widespread influence.

Therefore this is the question that is now before the people: Is efficiency affected by fatigue? An unequivocal answer of yes can be given, and this is substantiated by experiments in the physiological laboratories, by the records of accident insurance companies, and even by the books of numerous manufacturing concerns in many parts of the world. They all go to prove that it is economy to prevent the workers becoming overfatigued.

The laboratory has shown that a tired person is literally and actually a poisoned person, poisoned by his own waste products. Is it any wonder, therefore, that, as reported from Germany, the greatest proportion of accidents occurs from 10 to 12 a. m., when the morning fatigue has appeared? In France, Imbert has shown likewise that the greatest number of accidents takes place between 10 and 11 a. m., and again between 4 and 5 p. m. Also, when the output of work is considered, the figures are in accord with what this statement would suggest. To quote but one instance, Pieraccini experimented with six experienced typesetters. Their greatest efficiency was during the second hour of work, and from then it lessened till the noon hour. The errors, too, increased in number as the amount of work decreased.

From a purely economic point of view it is indeed evident that long hours, with the accompanying fatigue, are wasteful. When, however, fatigue is studied in relation to the health of the populace much of importance looms up, particularly when the women are considered. The preeminent effects from industrial overstrain in women are, a heightened infant mortality, a lowered birth rate, and an impaired second generation.

To enumerate all the various manifestations of this question would require a volume, such as that written by Miss Goldmark. But it becomes more and more evident, on close scrutiny, that there is much room for improvement in our views concerning the regulation of employment.

A DISTINCTIVE FORM FOR BICHLORIDE TABLETS.

The widespread publicity recently given to the death of a prominent banker from poisoning by a corrosive sublimate tablet taken by mistake directs attention to a not infrequent source of poisoning. In fact, since the attention of the public has been directed to this particular case, the newspapers have reported a number of similar instances in various sections of the country, though not all have had a fatal issue.

While we can never hope to do away entirely with death by misadventure, cases of accidental poisoning from this particular source could practically be abolished by the adoption of the German regulation, which requires that all tablets of corrosive sublimate be made in a cylindrical form wrapped separately in colored paper, and labeled poison. As an additional safeguard the tablets should have a distinctive color. In many hospitals it is customary to impart a blue color to corrosive sublimate solutions, and some manufacturers also put out blue tablets. The advantage of blue as a color for the tablets and the solution is that, so far as we can recall, there is no other tablet or solution of a similar color with which this poisonous drug is likely to be confounded.

The color alone, however, or even the printing of the word "poison" on each tablet, as is done by several manufacturers, would not have served as a warning in most of the cases which have been recently reported, for the patients have taken the medicine under circumstances which made it unlikely that they would have observed either the printing on the tablet or its color. The adoption of some specific form, and, above all, the wrapping of each individual tablet in a colored paper, would serve notice, even to the most hurried and careless user of the tablet, that it was not the ordinary innocuous tablet which he thought it was.

At least one manufacturer has for a long time made his corrosive sublimate tablets in a distinctive form and printed the word "poison" on them, but we do not know of any manufacturer who has taken the trouble to wrap each tablet separately. If any distinctive form is adopted it should be one which is not easily confounded with the ordinary disc. Probably the most striking shape would be the triangle or the diamond, which is already used by one manufacturer.

It seems desirable that some legislative enactment in regard to this matter should be undertaken in the several States, but, unfortunately, it is quite difficult to insure uniformity of action by the different State legislatures, and there is a danger that the individual States might prescribe such a variety of specific forms as to lead to confusion. The dangerous character of corrosive sublimate has been recognized from an early period, and it is specifically mentioned in the earliest of the poison laws. It is mentioned by name in all the State laws that specifically mention poisons, leading all other poisonous substances in this respect, and being named in thirty-six or thirty-eight of the State laws.

While there is so much legislation on the statute books safeguarding the sale of corrosive sublimate, no attempt has been made to throw any safeguards about the drug after it has left the pharmacy. In the case of the banker above referred to, and in other cases since reported, the pharmacist has been blameless. The poisoning in each case was due to the carelessness of the purchaser. While it may be difficult to enforce a law requiring the purchasers of poisons to keep them under certain specified conditions as a safeguard against their use by inadvertence, or by children, it is possible that some such legislation might be enacted. It would undoubtedly diminish the dangers of accidental poisoning from this particular preparation.

A FEDERAL ANTINARCOTIC BILL.

At a conference held in Washington on June 9th and 10th between the representatives of the United States Treasury Department, the National Drug Trades' Conference, and Congressman Harrison, a measure was drawn up intended to regulate the traffic in opium, coca leaves, and their derivatives and preparations, which is to take the place of the Harrison bill. This bill requires the registration with the Bureau of Internal Revenue of all persons who deal in, administer, or dispense these drugs or their preparations. Under this bill every physician will be required to register with the bureau, paying an annual fee of one dollar. In order to purchase any of these drugs he will be required to make out an order on a special numbered blank, which can be purchased only from the bureau, and shall, whenever required to do so by the collector of Internal Revenue, render a statement of the quantity of these drugs purchased by him. Under this measure pharmacists will not be permitted to dispense these drugs except upon a written prescription, signed by a physician, a dentist, or a veterinary surgeon registered under the act. In view of the fact that both President Taft and President Wilson sent messages to Congress urging the enactment of some such bill, it seems probable that this bill will become a law in the near future. It is much less burdensome on the physician than some of the measures which have been proposed to accomplish the same purpose, as he is not required to state the disposition made of the drugs, but only the quantity purchased.

Obituary.

FREDERICK FORCHHEIMER, M. D.,
of Cincinnati.

Doctor Forchheimer died at the Jewish Hospital of Cincinnati on June 1, 1913. Born in Cincinnati on September 25, 1853, he received his education at the Woodward High School of his native city and at the universities of Strassburg, Würzburg, and the College of Physicians and Surgeons (Columbia), from which institution he graduated. He settled in Cincinnati, where he had practised ever since. In 1895 he was appointed professor of theory and practice of medicine of the Medical College of the University of Cincinnati. In 1910 and 1911 he was president of the Association of American Physicians. In his death the medical profession has lost one of its distinguished members, who not only was a well known practitioner but also a writer of experience, especially in the field of pediatrics.

News Items.

Change of Address.—Dr. E. C. Bailey, to the Flanders Building, Fifteenth and Walnut Streets, Philadelphia.

Dr. Fenton B. Turck, from Chicago, to 14 East Fifty-third Street, New York.

Meetings of Medical Societies to Be Held in Philadelphia During the Coming Week.—Monday, June 16th, Medical Society of the Woman's Hospital; Tuesday, June 17th, West and North Branches of the County Society; Wednesday, June 18th, business meeting of the County Society; Thursday, June 19th, Northeast Branch of the County Society; Friday, June 20th, Jefferson Hospital Clinical Society and the Southeast Branch of the County Society.

Officers on Inactive List of Medical Reserve Corps Ordered to Active Duty.—The following first lieutenants on the inactive list of the Medical Reserve Corps of the United States Army, have been ordered to active duty at the provisional field hospital, Gettysburg, Pa., June 28th to July 10th: Dr. H. Sheridan Baketel, Dr. Walter M. Brickner, Dr. Richard Slee, Dr. Harold Hays, and Dr. Howard Fox, all of New York. It is said that this is the first occasion since the organization of the Medical Reserve Corps that officers on the inactive list have been ordered by the War Department to assume the duties of regular medical officers.

Commencement Exercises at Jefferson Medical College.—One hundred and twenty-six graduates of Jefferson Medical College, Philadelphia, received the degree of doctor of medicine at the annual commencement exercises of the college on June 8th. The honorary degree of doctor of laws was conferred on Francis Preston Venable, Ph. D., D. Sc., LL. D., president of the University of North Carolina, the orator at the commencement, and Abraham Jacobi, M. D., LL. D., emeritus professor of children's diseases, College of Physicians and Surgeons, Columbia University. The degrees were conferred by Mr. William Potter, president of the board of trustees.

Alumni Association of the University Medical College, Kansas City.—More than ninety physicians and surgeons attended the thirty-third annual banquet of the University Medical College Alumni Association, held at the Kansas City Athletic Club on the evening of May 26th. On behalf of the association, Dr. B. J. Reynolds presented a handsome silver loving cup to Dr. David E. Broderick, dean of the school. Dr. B. A. Poorman presided as toastmaster, and addresses were made by Dr. S. Grover Burnett, the retiring president, and Dr. George Norberg. Officers for the ensuing year were elected as follows: President, Dr. B. A. Poorman; vice-president, Dr. George Norberg; secretary, Dr. Frank Postlewaite, and treasurer, Dr. J. Kimberlin.

The Journal of the American Medical Editors' Association.—The first issue of this publication, which is the official organ of the American Medical Editors' Association, appears this month. It is a monthly periodical, and the publication committee is composed of Dr. H. Edwin Lewis, of New York, chairman and editor; Dr. James P. Warbasse, of Brooklyn; Dr. Alfred S. Burdick, of Chicago; Dr. Charles Wood Fassett, of St. Joseph, Mo.; and Dr. Joseph MacDonald, Jr., of New York, secretary. The publication office is at 92 William Street, New York. The object of the journal is to present the transactions of the annual meetings of the association, to keep the members posted concerning matters of current interest, and to promote in every way the best interests of the medical publications of America.

Alumni Association of Jefferson Medical College.—Seventy-five alumni of Jefferson Medical College met in Philadelphia on June 6th for the forty-first annual business meeting of the association. Dr. Charles S. Mangum, professor of anatomy at the University of North Carolina, was elected to succeed Dr. S. MacCuen Smith, of Philadelphia, as president. Other newly elected officers are: Vice-presidents, Dr. Charles P. McBurney, of Altoona, Pa.; Dr. G. T. Matlack, of Wilkes-Barre, Pa.; Dr. J. Coles Brick and Dr. John W. West, of Philadelphia; recording secretary, Dr. Henry K. Gaskill; corresponding secretary, Dr. Elmer H. Funk; treasurer, Dr. George W. Pilling.

A Million Dollar Gift to Vanderbilt University.—Announcement is made by the chancellor of Vanderbilt University, Nashville, Tenn., that Andrew Carnegie has donated $1,000,000 to the medical department of the university. Of this sum $200,000 will be given to the institution at once for the erection and equipment of suitable laboratories, and the income from the remaining $800,000 will be paid annually for the support of the department through the Carnegie Foundation. A condition of the gift provides that the direction of the educational and scientific work of the department be given by the trustees into the hands of a board of seven members, three of whom shall be eminent in medical and scientific work. It is provided that the chancellor of the university shall be one of the seven members of this board.

Memorial to Doctor Bristow.—Be it known by all men, and especially to those nearest and dearest to him, that the New York Society of Anesthetists, in executive session assembled, draft this expression of respect, admiration, and deep regret at the recent loss of their supporter and advocate, Dr. Algernon Thomas Bristow. His editorial and practical hospital support of the advancement of the art of general anesthesia has time and again aroused the admiration and emulation of this body of anesthetists, and so active and influential has this work among his many followers been, that this society wishes itself placed on record as considering it monumentally constructive and its cessation as a great loss to the surgical world.

Respectfully submitted,

Committee: { W. C. Woolsey, M. D., J. Tayloe Gwathmey, M. D., A. F. Erdmann, M. D.

Memorials to Doctor Forchheimer Planned.—A movement to establish a chair in the medical department of the University of Cincinnati, in memory of Dr. Frederick Forchheimer, who died on June 1st, was inaugurated at a joint meeting of the senate of the University of Cincinnati, the faculty of the Medical College and the staff of the City Hospital, on Monday, June 2d. It also was decided that an attempt be made to interest friends of the late physician in a movement to erect a monument on the grounds of the new City Hospital. While nothing definite was done to further the establishment of a permanent memorial, it is believed that the action of the board in endorsing a chair in the medical college and the erection of a monument, as a fitting manner in which to commemorate the work of Doctor Forchheimer, will cause his friends to unite in furthering the proposition.

Examination for Positions in the Medical Service of Philadelphia.—The Civil Service Commission of Philadelphia announces that competitive examinations for a number of positions in the Department of Public Health and Charities will be held in the City Hall on Wednesday morning, June 25th. The positions to be filled from the list of eligible persons obtained from these examinations are as follows: Head nurse, Philadelphia General Hospital, $300 to $600 a year, with room and board; head nurse, Philadelphia Hospital for Contagious Diseases, $300 to $600 a year, with room and board; medical inspector of schools, women only, $600 a year; assistant physician (resident), $600 to $1,000 a year, with room and board; assistant physician (resident), $600 to $1,000 a year, with room and board; assistant diagnostician and consultant, $2,000 a year. Applications must be executed and filed with the commission not later than the sixth day prior to and exclusive of the day of the examination. Detailed information as to the requirements for these examinations may be obtained upon verbal or written request to the Civil Service Commission, Room 875, City Hall, Philadelphia.

American Society for Physicians' Study Travels.—This organization, recently formed for the purpose of encouraging physicians to study the advancement of medical science abroad, was incorporated in Philadelphia on June 2d, with the following directors: Dr. E. E. Montgomery, Dr. W. E. Ashton, Dr. S. D. Risley, Dr. Swithin Chandler, Dr. S. Lewis Ziegler, Dr. A. D. Blackader, of Montreal, Dr. J. G. Adami, of Montreal, Dr. Samuel G. Dixon, Dr. Joseph S. Neff, Dr. George A. Knowles, Dr. McCluney Radcliffe, Dr. Thomas McCrea, and Dr. David Riesman. Prominent physicians active in the organization of the society are: Dr. James M. Anders, Dr. H. A. Hare, Dr. A. B. Hirsch, Dr. Thomas McCrea, Dr. William L. Rodman, Dr. Alfred Stengel, Dr. Joseph S. Neff, Dr. L. Webster Fox, Dr. Samuel G. Dixon, Dr. Judson Daland, Dr. Swithin Chandler, Dr. Albert Bernheim, and Dr. Francis X. Dercum.

Personal.—Dr. Raymond F. C. Kieb has been appointed superintendent of the Matteawan State Hospital for the Insane, succeeding Dr. Roy L. Leak, who has been acting superintendent of the institution since the resignation of Dr. John F. Russell. Doctor Kieb has been first assistant physician at the Dannemora State Hospital for the past three years. Doctor Leak will resume his duties as first assistant physician at Matteawan.

The honorary degree of LL. D. was conferred upon Dr. Edgar Fahs Smith, provost of the University of Pennsylvania, by Princeton University, at the 166th annual commencement exercises, on June 10th. The degree of doctor of science was conferred upon Dr. Simon Flexner, of the Rockefeller Institute, and Dr. David Linn Edsall, Jackson Professor of Clinical Medicine in the Harvard Medical School.

Dr. Frank D. Adams, dean of the faculty of applied science, McGill University, Montreal, has been appointed president of the Royal Society of Canada.

Dr. Harrison J. Hunt, of Island Falls, Me., has been appointed surgeon to the Crocker Land Expedition, which will sail on July 2d for the North Polar regions, under the auspices of the American Museum of Natural History, the American Geographical Society, and the University of Illinois.

Dr. Albert T. Weston, of New York, has been appointed an assistant surgeon in the Medical Reserve Corps of the United States Navy, to date from May 17th.

Dr. L. J. Hirschmann, of Detroit, was recently elected president of the Wayne County, Mich., Medical Society.

Dr. Percival J. Eaton, of Pittsburgh, has been elected president of the Associated Harvard Clubs.

The British Medical Association.—The eighty-first annual meeting of the British Medical Association will be held in Brighton on July 22d and the three following days. The president's address will be delivered on the first day of the meeting, and the scientific business will be conducted in sixteen sections. Several subjects of more than professional interest will come up for discussion, such as international aspects of British health resorts and sea bathing, in the Section in Climatology and Balneology. In the Section in Medical Sociology papers on different aspects of crime and punishment will be read by Sir B. Donkin, Dr. Charles Mercier, and Dr. James Scott as an introduction to a general discussion; Professor Bateson is expected to initiate a discussion on Eugenics; and Sir Henry Burdett and Dr. L. G. Gibbons will read papers on hospitals in relation to the stage, the public, and the medical profession, which, it is hoped, will prove valuable in helping to elucidate the problems involved in providing hospital accommodation for insured persons under the Insurance Act. In the Section in State Medicine Dr. Herbert Williams, medical officer for the Port of London, will open a discussion on port sanitary administration and the importation of disease, and other subjects suggested for discussion are the need for popular education in matters affecting the public health and maternity benefit and its connection with the Midwives Act. There will be a pathological museum in connection with the meeting, containing exhibits bearing on the various discussions and papers, specimens relating to recent research work, and instruments relating to clinical diagnosis and pathological investigation. Sir James Barr is the president and Dr. W. A. Hollis, consulting physician, Sussex County Hospital, Brighton, president elect of the association.

Pith of Progressive Literature.

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT.

April 3, 1913.

The Function of the Cerebellum.—L. Edinger presents the following: Irritation brought about at any point excites muscle tension, which may be increased to a degree that will cause severe cramps. On the other hand the author shows that any break in the system, whether in that part conveyed to the spinal cord, or in the cerebellar cortex, or in the medulla oblongata itself, results in markedly decreased muscle tension. Animals deprived of a cerebellum lie in a state of relaxation. They have scarcely power to stand; when lifted on their feet, they immediately fall: but should the red tegmental nucleus be removed in addition, the animals permanently lose all ability to stand. It is this well constituted muscle tension, which stimulates and varies muscle and joint movement, through the excitation of the labyrinth that makes standing and walking possible.

Trivalin.—Meehliss states that trivalin contains valeric acid, chemically combined with morphine, caffeine, and cocaine. Given subcutaneously: Dose, from 0.5 to 1.0 c. c.; medium dose, 0.01035 gramme. Morphine valerate, 0.0037 gramme; caffeine valerate, 0.00506 gramme; cocaine valerate=trivalin. It has been used as a substitute for morphine with good results on the surgical side of the City Hospital for one year. There is no tendency to heart depression, respiratory paralysis, or vomiting; although two isolated cases of nausea have been noted. Pain is decreased in from ten to fifteen minutes. Long usage does not impair its analgesic power, which is more intense than that of morphine. The mental state or sensorium is not affected by the remedy.

A Method for Testing the Vestibular Apparatus.—R. Bárány observes that the caloric method for the purpose of diagnosticating vestibular affections is harmless and painless. He syringes the right ear with water below body temperature (75° F.) with the head upright. Normally a horizontal, rotary nystagmus, toward the side not treated, is brought about and continues one half minute after the syringing is completed. By using water warmer than body temperature a nystagmus toward the side treated is produced. By exact measurement, from the beginning, of the length of time and the force of the reaction, he is enabled to detect any diminution of excitation of the vestibular apparatus, in partial paralyses of the nervus vestibularis.

Treatment of Gonorrhea with Tanargentan Bougies.—R. Polland says that tanargentan bougies give good results in stubborn cases of gonorrhea, where local contact of a germicidal astringent is desired. The solvent property and suitable consistency, as well as the absence of any appreciable quantity of fat, makes this remedy especially valuable.

Wet Compresses in Acute Inflammations.—P. Hertz says that a wet compress should be applied at body temperature with a waterproof covering. The waterproof covering is to be omitted only in suppurative or discharging processes, and antiseptics are to be used only for discharging wounds. The anodyne action of the compress is enhanced by using some rubefacient on the skin. The rubefacient also acts as a solvent and resorbent and is in a sense germicidal; which action should not be interfered with by unnecessary changing of the compress.

April 10, 1913.

Treatment of Infectious Diseases.—Grober advocates a semisolid diet; liquids to be given between meals to replace loss of body fluids by fever. The appetite is often impaired by neglect to care for the mouth. Food should be palatably seasoned and temptingly served. The author advocates lemon as a good flavoring agent. A patient well fed makes a more rapid and uncomplicated recovery. Baths for reducing temperature should be used in preference to antipyretics, and are especially sedative in cases of delirium. Packs are less beneficial, but may be used in cases of bedsore or weak heart. Morphine is useful in acute onset of excitement; as also hydrated chloral, veronal, or luminol (one sixth to one half a grain). During convalescence, energy should be conserved. All the organs are weakened by prolonged fever; they should not be too suddenly taxed. He prescribes a rest of at least two months after uncomplicated pneumonia; three months after a mild attack of typhoid fever.

The Sugar Contents of the Blood.—H. Tachan states the following: Examination of the blood as a whole, while the stomach is empty, as compared with the examination of the plasma alone, would show about equal proportions of sugar. After a meal of carbohydrates there is first an increase of sugar in the plasma; but this increase is slower in the blood corpuscles. Following this, there is a decrease of sugar in the plasma; then comes a period when blood corpuscles and plasma contain equal proportions of sugar; again followed by a decrease in the plasma to even less than that of the corpuscles. It is understood that during fasting a certain proportion of sugar is distributed from the centre to the periphery, and this possibly explains the higher proportion of sugar in the blood plasma during fasting. Frank and Sherokaner found such an increase of sugar in the blood plasma that the examination of the plasma became even more important than that of the blood as a whole.

The Efficacy of Camphor Water.—H. Leo states, on the authority of Professor Ehrlich, that Bölncke, of his institute, has for some time successfully cured mice of pneumococcus infection by subcutaneous injections of camphor.

April 17, 1913.

Serums and Toxines Used per Rectum.—Shibayama asserts that rectal injections of goats' blood into rabbits result in hemolysis and precipitates. Rectal injections of dogs' blood into rabbits result in agglutinins, but not in precipitates. By rectal injections of dogs' blood antigens may be developed. Diphtheria toxine and tuberculin, even when used in large doses, do not produce toxemia in animals, though they may not act as antigens. Diphtheria, typhoid, and cholera horse serums used rectally, even in large doses, give animals no passive

immunity. This fact proves the impossibility of resorption of antitoxine, as well as of bacteriolysin per rectum.

Repeated Serum Injections and Idiosyncrasy.—According to Nemmser, the danger of anaphylaxis after repeated serum injections is less than that from omitting to use this specific therapy in urgently indicated cases. This does not imply that the necessity of great precaution should be ignored. Until the question of anaphylaxis in man is made clear, it would be well not to use the serum unnecessarily in the dying; so that the value of this remedy may not suffer depreciation in the estimation of the public and of physicians. For repeated injections other kinds of antitoxic serums must be used. In the preparation of the serums all methods known to diminish their anaphylactic action should be employed. It would be well to observe the action of the two preventive anaphylactic methods of Besredka in man. To arrive at a final decision on anaphylaxis in man it would be well to register all cases of repeated serum injections in the larger hospitals.

The Medical Treatment of Feeble Labor Pains.—H. Reinhard has tried the English pituitrin and the German pituglandol. In the action of pituitrin (injections of 1 c. cm.) light pains were observed, only to subside in an hour. Labor had to be induced on account of small pelves and on account of severe pyelonephritis. Secale, in ampules of 0.5 grammes, repeated, if necessary, in an hour or two, will not lead to uterine tetanus, but will often cause vigorous pains, even if not of long duration. The engagement of the head may, at least, be accomplished so as to make possible an easy forceps delivery. Pituglandol is also a good remedy for inducing labor pains; but in the usual dose of one c. c. it may lead to tetanus of the uterus.

The Medical Treatment of Nervous Vomiting in Young Children.—H. Rosenhaubt has for some years had good results from the use of an insoluble, nonpoisonous anesthetic, the pethylester paramidobenzoin acid called anesthesin. It is practically nonpoisonous. He has employed it in nervous dyspepsia of adults, giving it in two to three per cent. strength in gum mixture—teaspoonful doses—ten minutes before meals. He has also used it in children. The remedy has afforded benefit in nervous vomiting and in reflex difficulty of swallowing. No benefit was derived from it in spasm of the pylorus of the Hirschsprung type, characterized by the appearance before the eighth week of scant stool, emaciation, and marked contraction of the epigastrium in a tumorlike protuberance, and, above all, by special aversion to drink. Since the differential diagnosis between the foregoing and simple spasm of the pylorus is very difficult, the use of the anesthesin may, to a certain extent, serve as a method for diagnosis. The author has, also, of late, found it useful in central, as well as in local, vomiting.

The Effect of Thorium X on Blood Cells.—Arneth says that thorium x has a harmful inhibitory action on the cell production of the central organs. The remaining leucocytes in the body will also be used up. The longer life of the body leucocytes is ascribed to the higher grade of chromozone segmentation. The production of leucocytes by inflammatory processes of organs would support this assumption, as viewed under the influence of thorium x. Should the doses of thorium x be too strong the production of leucocytes in the bone marrow would be wholly aborted. The pseudo eosinophils still in the circulation will also be used up.

April 24, 1913.

The Effect of Thorium X on Blood Cells.—Arneth, in a second paper, states that in the use of thorium x we deal with an intensity of action, and with varying results, on the leucocytes and erythrocytes. The blood count under normal conditions will give the value of the thorium x action on further examination of the blood, after its use. Still more extended examination of thorium x under pathological conditions will be necessary. This may lead to greater precision of dose of the dangerous remedy, and thus further its use.

Cymarin, a New Heart Remedy.—E. Ellard has found the chemically pure crystalline glycoside of *Apocynum cannibinum*, named cymarin, a quick and energetic heart remedy, which may also be used with success in many cases where digitalis is contraindicated. It possesses an intense diuretic action which renders unnecessary the employment of other diuretics in cardiac stasis. It may be given by the mouth, but by the intravenous method its action is apparent in a few minutes. That the therapeutic and toxic doses are so far widely different is of special advantage; so that its use, within given limits, is not dangerous to the patient.

MEDIZINISCHE KLINIK.

April 6, 1913.

Benzol Treatment of Myeloid Leucemia.—H. Reibmayr reports three cases of myeloid leucemia treated with benzol. One of the patients improved markedly, but the condition of the other two remained unchanged. As a symptomatic treatment benzol is to be placed side by side with Röntgen rays and thorium. It is advisable to combine the benzol treatment with energetic doses of arsenic.

Diagnosis of Duodenal Ulcer.—E. Allard, in reviewing the symptoms of duodenal ulcer, says that, all in all, they do not furnish a doubtful basis for diagnosis. He agrees with American and English authorities that the attacks of pain are paramount, but does not disregard the importance of all other symptoms as they do. Bier believes that the main reason for the disproportion of the number of duodenal ulcers in Germany and America and England lies in the manner of diagnosis. The author does not approve of laparotomy when the symptoms do not warrant it.

Salvarsan and the Nervous System.—E. Mattauschek says that since the greater number of side actions of salvarsan are known and can be avoided, in the field of neurology in selected cases, and with careful technic, the drug is an excellent remedy, which, alone or in combination with mercury, in syphilitic diseases of the nervous system is not only given with advantage, but is actually indicated.

Cholocele.—E. Levin reports two cases of this condition, namely, gall hernia, a noninfected bilious

encapsulated fluid lying in the peritoneal sac. The causes and outcome are discussed. He summarizes thus: By the escape of gall from the gallbladder and the extra and intrahepatic gall passages in inflammatory perforation of the wall, or in ruptures due to congestions, a general bilious peritonitis or a circumscribed bilious abscess, sometimes in multiple form, results. The more recent investigations show that a microscopical perforation is not essential; a general bilious or circumscribed peritonitis may arise from simple gall diffusion.

Acute Addison's Disease.—A. Lippmann reports an unusual case of this affection in a young man, twenty-one years old, who, always enjoying good health, was suddenly stricken and died in eighteen days. The symptoms appeared in the following sequence: Progressively diminishing blood pressure, asthenia, intoxication, and finally pigmentation. Adrenalin in large subcutaneous doses probably aided in the prolongation of life. The autopsy showed slight pulmonary tuberculous involvement, complete caseation of both adrenals, intact ganglion solare, and a marked hypertrophy of one accessory adrenal.

April 13, 1913.

A Study of the Tuberculin Percutaneous Reaction.—F. Wegerer advises the making of this test with the old tuberculin and covering the abraded surface with ordinary plaster, in anticipation of the occurrence of reactionary sensitiveness. These precautions prevent the appearance of the "distant reaction" of Moro. The latter the author considers artefact, and the hypothesis of "nervous allergy," therefore, loses its force. The percutaneous reaction is particularly fitted for use outside the hospital, and makes possible (by the taking of curves of tuberculin sensitiveness) numerous and detailed experiments on the inception and course of the tuberculous infection. Another advantage is that the reaction does not seem to be influenced by intercurrent infections, as typhoid fever or pneumonia.

Calcium Therapy.—P. Saxl gives a short résumé of the significance of calcium in living organisms in so far as it bears relation to therapeutic measures. The efficacy of calcium when given by mouth, a much mooted matter, is believed by the author to be of some value in the long run. Its hypodermic use, however, gives much more satisfactory results. A large number of hemorrhagic diatheses of various kinds have been treated in this manner with good results. Severe hemorrhages from the stomach and lungs have ceased for a long period after one, two, or three injections. The coagulation time determined by the Wright-Neu method was, except in a few instances, markedly decreased. Two cases of edema fugax were improved by the internal administration of calcium lactate, and showed no swelling for half a year. The effects upon exudates were varied. Cases of asthma without complicating chronic bronchitis were favorably influenced after one or two calcium gelatin injections. A severe chorea was brought to a standstill after calcium injections. It was possible to influence only a few cases of Basedow's disease in this manner. Indications for calcium therapy are numerous, but as yet not definitely known. This must be determined by more extensive experimentation.

April 20, 1913.

Diet in Diabetes Gravis.—Carl von Noorden asserts that the dietetic treatment of diabetes is a gratifying problem. He regrets the circumstance that in general practice the energetic dietetic treatment of diabetes is considered necessary only when the disease has progressed to a severe stage. The most opportune time for producing real and lasting results and to break the hold of a progressing process is then passed. Years are wasted in seeking drinking cures and in taking so called antidiabetic specifics, when the most potent therapeutic factor is to be found in strictly individualized dietetic measures. He insists that from the very incipiency of the disease an appropriate diet should be strictly adhered to. At this time everything can be gained or lost. If this method is followed out it will be found that the prognosis in diabetes is much more favorable than in any other chronic disease.

Remarks on the Urobilinogen Reaction in the Urine of Scarlet Fever Patients.—C. Schelenz says that the value of the amidobenzaldehyde reaction in the urine is of particular importance, because it is reliable, early appearing reaction in true scarlet fever. It should be made only on freshly voided urine of patients who have not received urotropin.

Occurrence of Oxyuris Vermicularis in Diseased Extirpated Appendices of Adults.—Rheindorf found that in adults who complained for a long time of dragging, boring, or lancinating pains in the region of the appendix increased by motion, the possibility of oxyures must be thought of. Even though the stools should be free of worms an anthelmintic is indicated. Should such patients suffer an acute attack of appendicitis the administration is to be immediately discontinued, since it may cause a great deal of damage. An appendectomy or internal treatment are then in order. In case of the former, a minute microscopical examination for the presence of the oxyures should be made in the excised appendix.

April 27, 1913.

Nature and Treatment of Dysmenorrhea.—A. Blau holds that, without regard to the "inflammatory dysmenorrheas," the classification of this condition according to the individual parts of the genitourinary system still hold good at the present time. Besides the uterine dysmenorrheas, a number of authorities believe in ovarian dysmenorrheas and find their contentions substantiated by microscopical findings. The mechanical genesis of uterine dysmenorrhea is still adhered to, since the proper therapeutic procedures for this cause give relief. The primary cause of the pains does not lie in the mechanical process, but in the condition of the nervous system. Accordingly, there is a dysmenorrhea with a nervous basis, for example after psychic trauma, without organic changes in the genitals. In the majority of the simple uncomplicated dysmenorrheas the pain is due to the weakness of the nervous system which accompanies the hypoplastic condition of the genitals of these individuals, which is a partial manifestation of a constitutional anomaly, asthenia infantum.

ZENTRALBLATT FUR CHIRURGIE.

April 26, 1913.

The Formation of a Useful Stump in Supramalleolar Amputation of the Leg by Means of the Osteoplastic Use of the Malleolus.—William Levy details a plan by means of which a useful stump may be secured when a leg must be amputated just above the malleoli, and nothing of the foot can be saved, if one or other of the malleoli is preserved with its covering of skin. The operation is simplest when the inner malleolus can be used. An incision is made half way around the leg on its outer side one centimetre from the plane of the amputation; from the ends of this incision another is carried downward so as to include the inner malleolus in a flap. The margins of this flap are retracted, the ankle joint is opened by an incision below the malleolus, the foot is forced to the side, and the inner malleolus is cut from the bone. The amputation is then performed, the vessels and nerves are properly cared for, and then the flap is coaptated to the ends of the bones, so that the cut bone surfaces lie in apposition. The wound is then closed with sutures. The same principles apply when the external malleolus is used, but the details of the operation are naturally different, and are more complicated. The internal malleolus is the one to be used by preference.

The Use of the Faradic Current in Intermittent Limping.—Wilhelm Kuehn reports the case of a man suffering from intermittent limping, in whom the femoral artery could no longer be felt, treated with the faradic current. Each leg was placed in a deep vessel filled with water of the temperature of 35° C., into which the faradic current was conducted. After 12 sittings the femoral could be felt again. Much pain was caused only in one place near the tibia, but this was cured by the direct application of the electrode. The patient is now able to take long walks.

May 17, 1913.

Setting of Fractures under Local Anesthesia.—Béla Dollinger uses a solution of novocaine and suprarenin as an anesthetic. Injection between the fragments has several disadvantages: The site of the fracture is usually very sensitive, and even when the injection causes no great pain the patient is made quite uncomfortable; the solution is apt to be injected into a blood clot in and about the fracture, so that the anesthetic does not come in contact with the nerves, or it may enter ruptured vessels and produce toxic symptoms; and anesthesia is complete only when the fluid is injected exactly between the fractured ends of the bones, a feat difficult to accomplish when the patient is very fat or in the presence of a large hematoma. A preferable method is to make the injections in a circle about the limb, a few centimetres above the site of the fracture, anesthetizing first the superficial and then the deep structures. The fracture can then be reduced without pain.

Nerve Injuries in Plexus Anesthesia.—Max Hirschler relates the following case: A man, fifty-two years old, had his right humerus luxated into the axilla. Plexus anesthesia was induced by the injection of twenty c. c. of a novocaine suprarenin solution; the luxation was then easily reduced, and the arm was fixed in position for a week. Soon after that the patient complained of numbness of the outer side of the right hand, together with an inability to bend the thumb and forefinger. Examination showed loss of sensation over the urea supplied by the cutaneous antebrachii mediales, marked hyperesthesia in the region of the cutaneous branches of the median nerve, hyperesthesia of the superficial branch of the radial nerve, absolute paralysis of the flexor of the forefinger, and a less degree of paralysis of the flexors of the thumb and middle finger. Electric tests showed a complete reaction of degeneration of the flexor of the forefinger. Four months later voluntary movement had returned to the forefinger, but it was still weak, and there was still some hyperesthesia in the region supplied by the median nerve and the superficial branch of the radial. These troubles could be explained only by a lesion in the plexus at the point of union of the last cervical with the first thoracic root, which is situated close to the subclavian artery below the best place to make the injection. This case shows the possibility of an injury of the plexus by the needle in making the injection, and, in the opinion of the writer, contraindicates the use of this form of anesthesia in patients who depend for their living on fine finger work, such as violinists, pianists, and workmen in the fine mechanical arts.

LYON MÉDICAL.

April 27, 1913.

Intoxication by Nitrogenous Compounds in Diabetes Mellitus. — Hugouneng, Morel, and Froment, studying the urine, blood, and cerebrospinal fluid in a comatose case of diabetes which terminated in death soon after, found an abnormally low azoturic coefficient (ratio of urea nitrogen to the nitrogen in compounds other than urea) in each of the fluids examined. The change was especially pronounced in the cerebrospinal fluid. The case tends to show that coma in diabetes may be due as well to accumulation of toxic nitrogenous compounds in the system as to that of compounds arising from the imperfect metabolism of fats.

May 4, 1913.

Porencephaly.—L. Babonnex and H. Darré give a detailed report, with illustrations, of a case of porencephaly which afforded strong support to the theory that most cases of this condition are of inflammatory origin and that the cerebral aphasia is secondary to a process of encephalitis or meningoencephalitis.

Thyroiditis as a Sequel to Pneumonia.—C. Roubier and A. Goyet report the case of a man with a large unilateral goitre of long standing, in whom, about a week after the temperature had reached normal in recovery from pneumonia, slight fever reappeared and pallor and cachexia began to be manifest. By exclusion the disturbance was finally ascribed to the thyroid gland, and although there was no local edema, redness, or abnormal heat, but merely a sensation of deep fluctuation and slight tenderness, it was decided to operate. Upon introduction of a trocar there was evacuated

about two tablespoonfuls of pus, which yielded a pure culture of pneumococcus. After this the patient's condition improved, and complete recovery followed. A special feature of the case was the slow course of the suppurative process in the thyroid.

May 11, 1913.

Painful Adiposis in Sciatica.—M. Favre and A. Tournade point out that the local adipose overgrowth accompanying certain obstinate and long standing cases of sciatica is of the painful variety; seizing a fold of skin between the fingers often causes a sharp reaction. Certain points are especially sensitive, and at these points palpation often reveals indurated but not clearly defined nodules, enclosed in the more diffuse adiposis. The sciatic neuritis appears to cause a trophic disturbance resulting in thickening of the cellular tissues, which in turn irritates the terminal nerve filaments and keeps up a local neuralgic state. Massage was found by the authors to yield excellent results after various other measures had failed. It should be practised in a progressive manner and directed more particularly to the nodular formations.

Wound of Chest Involving Internal Mammary Artery.—L. Desgouttes and L. Lambert report a case of this nature in which death took place unexpectedly during the night from secondary hemorrhage. This patient had had no bloody expectoration, the general condition had rapidly improved, and the wound was at the limit of the course of the mammary artery; operative intervention had therefore not been undertaken. Furthermore, a similar case had recovered without any difficulty. The fatal result in the first case seemed to show that where there is doubt as to whether the primary hemorrhage is parietal or pulmonary, the wound should be explored, though perhaps not immediately.

PARIS MÉDICAL

May 10, 1913.

Hepatic Insufficiency in Appendicitis.—J. Duvergey points out that in appendicitis the liver is the organ that most directly suffers from the toxines elaborated, since the venous blood from the appendix passes at once to the liver through the superior mesenteric and portal veins. The resulting disturbance of hepatic function manifests itself in variations in the excretion of urea—more particularly a diminution—and in alimentary glycosuria and urobilinuria. Severe cases of appendicitis show a very marked decrease in urea excretion, which is replaced in convalescence or soon after successful operative intervention by a marked rise. In mild subacute cases, there is a slight rise of urea excretion during the attack. Low urea excretion, with alimentary glycosuria and urobilinuria, with associated clinical signs, imply a grave prognosis, suggesting the advisability of and sometimes compelling surgical measures. The study of urea curves permits of making a diagnosis between lesions of the appendix and the uterine annexa. It even allows one to suspect that the appendix and tube are involved in the same infective process.

PRESSE MÉDICALE.

May 14, 1913.

Chronic Amebic Dysentery.—A. Chauffard advises that the possibility of the presence of cases of amebic dysentery, even in cities in temperate climates, be constantly borne in mind, lest the occasional cases of this nature that do occur should be wrongly treated. He reports the case of a patient who had had amebic dysentery during his boyhood in Turkey and eighteen years later, in France, had a recurrence of his old trouble, apparently brought on by an ordinary attack of benign acute diarrhea. After a long period of ineffectual treatment, the amebic origin of the disease was recognized and emetin given to the amount of 0.32 gramme in a week. The temperature promptly fell, the number of stools decreased until, on the fifth day, there was no movement at all, pain disappeared, and the patient promptly gained in weight.

Thermogenesis and Glycemia.—H. Bierry refers to the assertion of Chauveau that glucose is the sole substance undergoing combustion directly in the tissues and shows that a close relationship exists between the amount of glucose circulating in the blood and heat production. This relationship is indicated, for example, by the facts that in warm blooded animals, the greater the glycemia the higher the normal temperature in the species; that in cold blooded animals glycemia is low; that upon section of the cord or removal of the adrenals, which lowers the temperature, hypoglycemia also appears, and that in starved animals, before death, an abrupt drop in temperature takes place at the moment when sugar disappears from the blood.

REVUE DE MÉDECINE.

May, 1913.

Origin of Hepatic Cirrhoses with Pigmentation.—G. Roque, J. Chalier, and L. Nové-Josserand refer to those cases of cirrhosis of the liver in which there is diffuse skin pigmentation and rapid cachexia, and the autopsy shows a hypertrophic liver loaded with iron pigment, the latter being found also in less amount in the peritoneum, abdominal lymphatics, spleen, and other organs. In the etiology of these cases, diabetes mellitus, alcoholism, and malaria have all been held as factors. The more intimate mechanism of the deposition of iron has been variously described. Castaigne, among others, contending that the liver is itself responsible for the abnormal deposition of iron. The authors report two cases peculiar in that the liver showed atrophic instead of hypertrophic cirrhosis and present arguments to the effect that the group of pigmented cirrhoses shows no essential difference from nonhepatic conditions with iron pigmentation of organs, but is the result of an hemolysis, similar to that of pernicious anemia. The recent finding of diminished resistance of the red corpuscles in "pigmentary cirrhoses" supports this view. Where the hemolysis is very intense, both iron and bile pigments are set free, and the resulting condition, sometimes met with in hepatic cirrhosis, is a hemolytic jaundice.

Bilateral Tuberculous Pneumothorax. — C. Roubier gives histories of thirteen cases collected in literature and reports a personal case. Discussing the condition in general, he states that it may occur early in the course of phthisis, though oftener late. The cause is usually the rupture of subpleural tuberculous focus or small cavity on either side of the chest, though in rare instances a pathological interpleural communication or the rupture of an emphysematous vesicle on one side have been responsible. Simultaneous bilateral rupture is rare—one certain and three doubtful cases; in the other cases the interval between the two perforations varied from ten hours to over six months. The interval before death after the second perforation was from a few minutes to six days. Sometimes rapid progress of the disease on the side opposite the first pneumothorax can be made out before the second perforation. The diagnosis of the second pneumothorax is seldom made during life. Effectual treatment could only exceptionally be carried out.

BRITISH MEDICAL JOURNAL.

May 24, 1913.

The Incidence of Ophthalmia Neonatorum in London.—N. Bishop Harman bases his statistics upon the official report of the Health Officer of the London County Council, which covers only nine and a half months, the first period during which the reporting of the disease was compulsory. The corrected figures for the year would be 850 cases, an incidence of 0.843 per cent. of all the reported births, excluding stillbirths. This is in close accord with an analysis of the frequency of the disease based upon the records of 12,680 live births in private practice, the incidence in this series being 0.867 per cent. Of the entire number of cases mentioned in the official report 231 were followed to their ultimate issue. Of these, 218 were reported to have recovered completely, leaving thirteen cases in which there was some permanent impairment of sight. The incidence of permanent injury is 5.6 per cent. in this series. In the series from private practice the incidence was found to be 5.4 per cent. In every case but one the eyes were cleansed immediately or shortly after birth. In 125 of these, however, the only antiseptic used was boracic lotion, and in twenty-two others sterile water only. In fifty of the cases there was an interval between the birth of the child and the use of the solution in the eyes. It is of interest to note that by far the largest number of the cases occurred on the third or fourth day of the puerperium. In forty per cent. of the cases there was a history of vaginal discharge in the mother. In his conclusions based upon these findings Harman states that the very small incidence of the disease, and the extremely slight likelihood of the permanent injury of the eyes, seem to render the prophylactic use of potent disinfectants unwarranted. He believes that the proper way to approach the prevention of the disease is to treat the mother prior to her delivery, so as to cure the vaginal condition which is usually present. He feels that the danger of injuring the infant's eyes by the antiseptic solutions is such as to render their use almost as dangerous as the disease which they are intended to prevent.

A Preliminary Note upon an Experimental Investigation of Concussion of the Spinal Cord and Allied Conditions.—Alan Newton, using cats, dogs, and monkeys, caused varying grades of direct concussion of the cord, several degrees of compression, and interference with the circulation for differing periods of time, and comes to the conclusions that: 1. The spinal cord is extremely sensitive to slight degrees of compression and concussion. 2. In spite of the slight anatomical changes demonstrable after lesser degrees of injury, the disturbance of function which results is considerable. 3. After concussion which has abolished motor efferent conduction, sensory conduction can still be demonstrated. 4. Arrest of the spinal cord circulation by aortic compression abolishes spinal cord function in from fifteen to thirty seconds. 5. These experiments support the view that there is an organic basis for the signs and symptoms of "railway spine" and allied conditions of traumatic neurasthenia. The injury in compression and concussion does not seem to be due to damage to the bloodvessels of the part, but to direct injury to the nerve cells and fibres in the cord.

Pseudofractures of Transverse Processes.—Owen L. Rhys reports five cases in which x ray photographs showed what appeared to be fractures of the ends of the transverse processes of one or more of the lumbar vertebræ. In no case was there, however, any evidence of fracture, and in most there was neither history of injury nor complaint of pain or other symptoms referable to the side showing the apparent fracture. Rhys believes the condition to be due to developmental failure of ossification, the process being arrested before it is complete.

LANCET.

May 24, 1913.

The Electrical Action of the Human Heart.—A. D. Waller (Lecture 1) has employed five different leads in his studies of the electrical reactions of the human heart. They are the right and left superior, taken from the mouth to the right and left hands respectively; the right and left lateral, taken from the right and left hands respectively to either of the feet; and the transverse, taken from one hand to the other. These leads may be divided further into strong and weak leads; the strong are the transverse, the left superior, and the right lateral; the other two are weak. Leaving the two superior leads out of account, the remaining three correspond closely to Einthoven's three. Waller believes that his own leads, the transverse and both lateral, afford simpler material for picturing the balance of potentials and the direction of currents on the two sides of the body, and lead naturally to a simple formula for the determination of the direction of the current axis through the heart and body. The angle of the current axis is determined by a consideration of the difference between the potentials of the several leads. A mesial point of the body is used for the determination of the several potentials. When the mouth, M, is used, the

potential difference between this and the right side, R, is small; between M and L, the left side, the difference is large. In analogy to the mechanical idea of a balance, M is the fulcrum or zero point of a beam carrying a heavier weight on the left arm than on the right. If we take the angle of the beam at M as 90° when the two arms are equally loaded, the angle of inclination would be expressed by the formula: $\tan a = \frac{L - R}{L + R}$. In the case of an electrocardiogram of the two superior leads, if the right superior equals 0.0001 volt and the left 0.001 volt, the calculation of the angle would be as follows: $\tan a = \frac{10 - 1}{10 + 1} = \frac{9}{11} = 0.82 \therefore a = 39°$. It would be concluded, therefore, in this case that the current axis of the heart formed an angle of 39° with the vertical. Similar deductions as to the current axis can be made from the lateral leads, but the formula in this case is different. The importance of these observations lies in the fact that the small angles come from "broad" hearts, or ones with flabby musculature, and which lie upon the diaphragm. Where the angle is large the heart is usually "long" or firm and of good muscular tissue. The differences between these two types of hearts do not seem to depend upon sex or age, or upon gross valvular disease. It is to be mentioned that gaseous distension of the stomach may give rise to readings indicative of a "broad" heart through upward pressure and displacement.

The Dangers and Complications of Salvarsan Treatment.—Hugh W. Bayly says that probably over a million injections of salvarsan have been given and that there are only about 150 recorded deaths. Majors T. W. Gibbard and W. S. Harrison saw no deaths in over 2,000 cases, and the author none in 500 cases, while in a large number of cases treated in the London Lock Hospital there have been but two deaths. Therefore Bayly feels justified in concluding that the danger to life is extremely small. The recorded deaths can be grouped under four headings: 1. With symptoms of meningitis; 2, with symptoms of nephritis and uremia; 3, with toxic symptoms associated with degenerative processes in the liver; 4, with symptoms of pulmonary embolism. Short of death, the gravest complications of the treatment are those associated with the toxic action of the drug on the body in general, and those due to thrombosis and phlebitis. The supposed danger to the optic nerve seems to be absolutely without foundation.

A Case of Phthisis with Complete Cavitation of the Left Lung.—D. W. Carmalt Jones and E. S. Worrall report the case of a young woman of twenty-one who died from pulmonary tuberculosis and whose lungs showed complete cavitation of the entire left lung, which is described as a "bag, communicating with the trachea through a bronchus, adherent to the chest wall, and about half full of fetid pus." The right lung had a large cavity in the upper lobe and the remainder was involved in "universal chronic tuberculosis."

A Method of Counting Bacteria in Water.—R. Donald describes his method of preparing glass pipettes so that they will deliver drops of a uniform weight, for a given fluid and a given temperature. By using such pipettes and placing a drop of known size on a clean but faintly greasy slide, he obtains, with water, a uniform dried film. The deposited bacteria can be fixed to the slide by mixing a trace of twelve per cent. gelatin medium, hydrocele fluid, or of diluted and filtered egg white solution with the water to be tested before dropping it on the slide. Such films must be dried cold under the air pump to avoid having too thick a margin. The drops, fully dried, are then fixed with a solution of phenol (ten per cent.), or of mercuric chloride (five per cent.), in absolute alcohol. They are then stained for one minute with carbol fuchsin which has been made with bacteria free water. A cover glass is placed over the films and held by a minimum of petrolatum. Under the oil immension direct counts can be made, using a low compensating ocular fitted with a square aperture which is divided into strips by fine hairs. By this method of direct enumeration Donald has found that ordinary laboratory distilled water contains over a million of bacteria to the cubic centimetre. Counts made by culture methods fail to show any large number of bacteria in similar water, and therefore the interpretation of the so called "salt fever" as being due to bacteria has not been generally supported by bacteriological findings.

PRACTITIONER.

May, 1913.

Ocular Diseases Occurring in Association with Diabetes Mellitus.—D. Matheson Mackay enumerates the following ocular conditions that seem to be dependent on an associated diabetes: 1. Abnormal refraction and accommodation. Sometimes there is a sudden development of hypermetropia, the patient can see clearly neither at a distance nor near without glasses, but regains normal vision with a suitable convex lens. Occasionally myopia develops instead. Abnormal accommodation is shown when a patient finds that he is unable to read, or needs a stronger convex lens for presbyopia than his age warrants, because the ciliary muscle becomes wholly or partially paralyzed. Usually the refraction errors are temporary and clear up in a couple of months or less. 2. Changes in the lens, either cataract, or "second sight" due to myopia produced by the lens. Diabetic cataracts have been known to disappear after a successful treatment of the diabetes; this is the only form of nontraumatic cataract that is likely to clear up spontaneously. 3. Changes in the retina, diabetic retinitis. 4. Toxic amblyopia, in which the papillomacular bundle of fibres in the optic nerve, is injuriously affected by toxic substances, the result of anomalies of metabolism. This condition is very similar to the toxic amblyopia caused by alcohol and tobacco. 5. Visual faults due to cerebral lesions. 6. Paralysis of the extrinsic ocular muscles.

INDIAN MEDICAL GAZETTE.

May, 1913.

Can Cholelithiasis be Successfully Treated without Operation?—T. H. Delany says that most patients in the part of India where he is located refuse operation when suffering from chole-

lithiasis; so he was led to look for some form of treatment that would effect more than temporary relief of pain. This he thinks he has found in large doses of ipecac, and gives the histories of several successful cases.

BOSTON MEDICAL AND SURGICAL JOURNAL.

May 29, 1913.

On the Frequency of the Transition of Ulcer of the Stomach into Cancer.—Julius Friedenwald believes from a study of 1,000 cases of cancer that while gastric ulcers are at times transformed into malignant growths, such a change does not take place in more than twenty-three per cent. of the cases, and probably in not even so large a proportion.

Tuberculous Osteomyelitis of the Digits.—Robert M. Green maintains that tuberculous osteomyelitis of the digits is essentially a disease of infancy and childhood, presenting a definite clinical picture and tending strongly to spontaneous recovery. It is characterized pathologically by bone destruction and rarefaction and by chronic inflammatory reaction in the surrounding soft tissues. It may heal by resolution and absorption, or by sequestration, suppuration, and sinus formation. Its differential diagnosis from pyogenic osteomyelitis, sarcoma, and syphilitic dactylitis may be made by clinical signs and x ray examination. Its prognosis for anatomical and functional recovery is good, and is proportionate to the amount of bone destruction and scar formation. Therapeutically, primary emphasis is to be laid on general hygiene and local fixation. Incision should rarely be resorted to, since it complicates the dressing, protracts convalescence, and increases subsequent deformity and disability. Amputation is almost never indicated. Probably treatment with the x rays, or other forms of irradiation is a valuable adjunct to the conservative therapeutic measures, since it expedites recovery by stimulating natural reparative processes.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

May 31, 1913.

Basic Fuchsin in Chronic Leg Ulcer.—Eugene S. May and M. L. Heidingsfeld make a preliminary report of the use of basic fuchsin in the treatment of chronic leg ulcers in the dermatological wards of the Cincinnati Hospital. Their investigations showed that basic fuchsin (Grüblers Fuchsin für Bakterien) is not only a nontoxic, very diffusible germicide, but also that it has a strong, stimulative influence on epithelial and granulation tissues. The ulcers are dressed with gauze soaked in fuchsin solution (one to 1,000) either alone or combined with an ointment of fuchsin (one per cent.). The formula for the ointment is one part of fuchsin to five parts of petrolatum, and 100 parts of anhydrous wool fat. The writers are impressed with the satisfactory therapeutic efficacy of this remedy and commend it as a routine measure in this class of cases. Its use, however, should not exclude other indicated measures such as antisyphilitic treatment, corrective appliances, etc.

Acute Posterior Ganglionitis (Herpes zoster) Simulating Surgical Conditions in the Abdomen.—Lawrence Litchfield, in discussing this affection, cautions us to be on our guard against mistaking an acute posterior ganglionitis, in the preeruptive stage, for a condition demanding surgical interference in all patients with diseases which are especially prone to be complicated by herpes zoster, such as tabes, general paralysis, tuberculosis, psoriasis, and possibly patients under arsenical treatment.

Treatment of Superficial New Growths by Pure Radium Bromide.—Francis H. Williams and Samuel W. Ellsworth give the results of the use of radium in superficial new growths at the Boston City Hospital, adding to the statistics of 181 cases of skin cancer of various forms the detailed history of thirteen cases illustrative of the various classes of these new growths. The writers conclude that the application of pure radium bromide in sufficient amount, properly used, is a harmless, painless, and efficient method of treating early superficial new growths, well adapted to cancers of the face by reason of the excellent cosmetic effects, and particularly to the eyelids where operation may be attended by special difficulties and disadvantages. With proper care there is no danger to the eye. While operation is the method of choice in early skin cancer, radium should be used first in early cases, and operation reserved for such as are not amenable to it. More success follows the use of radium when it is the first treatment used than when it is used after operation, x rays, etc., although it does well even under these circumstances. Improvement is usually observed after the second or third application, and the number of applications needed is from two to ten, in some cases more than twenty. As radium is free from dread and its action is painless, advice will be earlier sought by patients fearing surgical interference and the chances of recovery will thereby be enhanced. The analgesic action of radium is worthy of consideration. Radium is the best treatment for keloids, unless they are extensive. When skin lesions of small area do not heal readily under simple applications, radium should be used, if obtainable. Although, like all powerful remedies, the use of radium is not unattended with danger if care be not taken, no untoward results have occurred during the ten years in which radium has been used by the writers.

Method of Bone Plating.—Carl E. Black has substituted for the heavy Lane plates untempered clock spring steel of various thicknesses and widths which may be adapted to accurately fit any contour at the operating table, and may be made as long or as thick as may be desired. The narrowest and thinnest plates placed on both sides of the bone in a direction to meet and resist the greatest strain which will be applied by muscular action will usually meet every indication. In the use of these thin steel ribbons the space for the accumulation of blood and serum is reduced to a minimum, and infection is less likely. The periosteum can be more nearly coapted. The remaining foreign body is from three to ten times less, which permits a more careful approximation of the fascia and skin.

An Operation for Ventrosuspension by the Round Ligaments.—Harold Neuhof has devised a simple operation for ventrosuspension which has apparent advantage over the Olshausen operation.

By a median incision the abdomen is opened, the uterus is grasped and held at the desired level. The region in which one round ligament leaves the abdominal cavity is exposed by retracting upward on that side of the wound. At the internal abdominal ring a catgut suture is begun by passing the needle through the ligament and the adjoining parietal peritoneum. The suture is continued by alternately transfixing the round ligament and the parietal peritoneum, with the overlying transversalis fascia, to within a short distance of the uterine horn and is here ended. (To avoid atrophy the suture must pass through and not around the broad ligament.) The same treatment of the ligament on the other side follows and the abdominal wound is closed in the usual way, the parietal peritoneum being preferably sutured by the everting stitch, suggested by the writer, in order to avoid omental adhesions.

MEDICAL RECORD.

May 31, 1913.

The Clinical Evidence of Lymphuria.—Heinrich Stern, in noting the fact that there are many forms of albuminuria in which a renal lesion may be positively excluded, questions whether the albumin in these conditions is really derived from the serum. Among these forms of albuminuria he mentions the postural, cyclic, adolescent, and compensatory. While examining a number of specimens of chylous urine he was convinced that in a certain proportion of instances of these forms of albuminuria the proteid body had reached some part of the urinary tract through the numerous lymph channels communicating with it, and that it is lymph albumin and not serum albumin with which we are dealing, and that notwithstanding their identical chemical structure, the proteid in lymphuria has never entered the blood stream. Lymphuria is always marked by the presence of well constituted lymphocytes, or of "pus corpuscles," as they are wrongly called. Genuine pus corpuscles are old or deteriorated leucocytes, and are never found in the urine except in conjunction with a sufficient number of form elements indicative of destructive changes in some portion of the genitourinary system. Roughly speaking, the number of lymphocytes in a urine corresponds with its content of lymph albumin. Recent investigations have demonstrated the large number of the renal lymph channels and their intimate connection with the uriniferous tubules. Moreover, the lymph vessels in the mucosa of the ureters and bladder communicate with the outer epithelial layers of these organs, and may readily transmit their contents to the urine. Overfilled intestinal lymphatics with high internal tension predisposes to lymphuria. The writer concludes that serum albuminuria concurs with its inevitable globinuria, while in lymphuria there is little or no globulinuria and no evidence of renal damage. An intermittent juvenile albuminuria without inflammatory product, but with more or less numerous, well constituted lymphocytes, points to the presence of lymph in the urine. When in addition to these findings in the urine the patient has intestinal disease or habitual constipation; when there are evidences of a lymph stasis, enlarged tonsils, much adenoid tissue, and palpable lymph nodules; when the patient is anemic, easily exhausted, and averse to bodily exercise, a diagnosis of lymphuria is justified.

Colon Bacillus Infection of the Kidney.—Winfield Ayres leans strongly to the theory that colon bacillus infection of the kidney is of hematogenous origin, and not due to contiguity, since the kidney has, besides its true capsule, its fatty capsule as a wall against infection by contiguity with the colon. As predisposing causes he names injury, renal congestion, and preexisting inflammation. The symptoms are those of a low grade septic infection, with or without pain in the region of the kidney, and in most cases great irritability of the bladder. Diagnosis must be made by culture, as the colon bacillus is not easily recognized by the microscope. The kidney should be the first organ suspected when we have the subjective symptoms of cystitis, pus in the urine, and a septic temperature curve. If Gram negative bacilli are found on microscopical examination a culture should be made. Palpation will often reveal an enlargement of the kidney, and often the slight swelling will be unrecognizable by touch. In the former case a radiograph may be of value; in the latter the plate will show nothing. Rest in bed and hot applications over the affected side are indicated on the first suspicion that one or both kidneys are inflamed. As a urinary antiseptic hexamethylenamine is our sheet anchor, and it must be pushed until free formaldehyde is detected in the urine, or until 100 or 120 grains are given in twenty-four hours. To detect the formaldehyde and to distinguish it from hexamethylenamin Burnam's test may be used. When formaldehyde is present in a solution of one to 20,000 or stronger, there follows an intense blue color, which gradually changes to green and then after a few minutes to brown. The test aids in determining the dosage of hexamethylenamine, and also advises us of the utility of continuing the drug. The initial dose is 7.5 grains three times a day, each day testing for formaldehyde, and until it is found, increasing the dose rapidly up to 100 or 120 grains *per diem*. If formladehyde is not detected in the urine when the maximum dose is reached, the drug should be stopped and some other urinary antiseptic (sodium benzoate or salol) tried. Colon bacillus vaccines have been used successfully by others, but the writer has never seen a case where he thought they were indicated. After two weeks, if the palliative methods have failed, the ureters should be catheterized to determine the condition of the kidneys and to allow of gentle flushings with hot boric acid solution. If residual urine is found in the renal pelvis, the kidney must be removed, unless a plastic operation can be done on the upper extremity of the ureter.

JOURNAL OF PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS.

May, 1913.

Pharmacology of Respiratory Centre.—A. R. Cushny presents a study of the effects of morphine, hydrated chloral, urethane, caffeine, and strychnine on the respiration, conducted with improved experimental methods. All these drugs were found

to affect the frequency of respiration more constantly than the depth. The first three tended to slow and deepen the breathing, while caffeine and strychnine rendered it quicker and shallower. The experiments showed that the changes in the respiration occurring under the influence of poisons cannot be attributed exclusively to altered susceptibility of the respiratory centre either to its normal activating hormon—carbon dioxide—or to nervous impulses, but are due rather to a more fundamental action on the process of rhythmic discharge which is the essential function of the centre.

Tolerance of Glucosides of Digitalis Series.—A. J. Clark found the intact common grass snake to be thirty times more tolerant than the frog to strophanthin injected hypodermically; its isolated heart, moreover, was found to be more than one thousand times as tolerant as the isolated frog's heart. He believes this tolerance to be due to tissue immunity, as he found no evidence that the tissues of the snake, any more than those of the frog, rabbit, and rat, have any power to destroy strophanthin; neither could it be shown that the heart muscle in these animals specifically absorbed the drug. Clark thinks it probable that the action of strophanthin on the heart is of a physical nature, viz., that it modifies the surface potential existing upon the membranes of the heart.

Vascular Conditions and Pituitrin Diuresis.—R. G. Hoskins and J. W. Means found that there is no constant relationship between pituitrin diuresis and either systolic blood pressure or pulse pressure, or the ratio between them. The diuresis is due primarily to direct stimulation of the renal cells, usually aided, probably, by a concomitant vasodilation in the kidneys.

Proceedings of Societies.

THE MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Stated Meeting, March 17, 1913.

The President, Dr. Reynold Webb Wilcox, in the Chair.

The Clinical Evidence of Lymphuria.—This paper, by Dr. Heinrich Stern, was read by Dr. A. E. Gallant, Dr. Stern being ill. The purport of this preliminary sketch, the author stated, was to put lymphuria on a clinically demonstrable basis, maintaining, 1, that serum albuminuria concurred with its proportionate globulinuria; 2, that there was no, or but a neglible, globulinuria associated with lymphuria; 3, that lymphuria occurred without any evidence of renal damage; and, 4, that an intermittent juvenile albuminuria without demonstrable inflammatory products, but exhibiting more or less numerous well constituted lymphocytes, pointed to the presence of lymph in the urine. When, in addition to the chemico microscopical findings, the young or adolescent patient was affected with intestinal disease or habitual constipation, showed evidence of a lymph stasis, enlarged tonsils, much adenoid tissue, and palpable lymph nodules, and was anemic, easily exhausted, and averse to bodily exercises, a diagnosis of lymphuria was justified. While noninfectious chyluria or even lipuria in the narrower sense, was a rare condition, simple lymphuria appeared to be comparatively frequent. None of the theories thus far advanced to explain the cause and mechanism of the juvenile albuminurias was really satisfactory. They all assumed that the albumin must of necessity be derived from the blood, though they were all in agreement as to the points that the kidneys were not affected, that the phenomenon was intermittent, and that the prognosis was favorable. Recent investigations concerning the real lymph channels had demonstrated their large number and intimate connection with the uriniferous tubules. Besides, the lymph vessels in the mucosa of the ureters and bladder communicated with their outer epithelial layers. The reason why not every individual presented a lymphuria was because the functional activity of the intestinal lymphatic system was not interfered with. Overfilled intestinal lymphatics exhibiting high tension within w re undoubtedly the forerunners of lymphuria. The lymph which could not flow through the larger vessels slowly forced its way through narrow and tortuous collateral channels, and thus a portion of it would eventually be excreted into the urinary tract. A patent communicating channel admitting demonstrable amounts of lymph once established, the lymphuria might become a more or less regular phenomenon, even when its original causative factors had ceased to exist. The excretion of the lymph into and with the urine formed only a portion of the juvenile albuminurias, although it occurred much more frequently than might be supposed.

Colon Bacillus Infection of the Kidney.—This paper was by Dr. Winfield Ayres. Recent research, he said, had demonstrated that very many pathological conditions of the abdominal viscera are directly due to infection by colon bacilli. Were we to consider these infections only, one might be led to believe that they were due to continuity, but colon bacillus infections occurred in other parts of the body also, and were unquestionably of hematogenous origin, and we would have to conclude that the colon bacillus was like other germs we had to deal with and that infection by this organism was through the blood in nearly all instances. Predisposing causes of colon bacillus infection of the kidney were, injury, congestion of the kidney, and preexisting inflammation. Under the first were direct and indirect trauma, and under the second were to be classed those cases which followed confinement, operations on the pelvic organs, and renal calculus. Third, colon bacillus was sometimes engrafted in some other infection of the kidney. Two illustrative cases were cited in one of which the preceding infection was tuberculous, and in the other, gonococcic. Fourth, some cases were met with in which no predisposing cause could be found. Primary colon bacillus infection of the kidney was usually ushered in with a slight chill There might or might not be pain in the region of the kidney; commonly the only symptom complained of was great irritability of the bladder. Slight chills occurred at irregular intervals, and the temperature ranged from 99° to 102° F.; indicating a low grade of septic infection. Exceptionally, in the more severe form the fever rose as high as 106° F., and might be accompanied by delirium. Spontaneous recovery occurred very rarely; the affection, if unrecognized, tending to persist indefinitely, with partial or complete destruction of the kidney. In certain instances a calculus would be found partly blocking the ureter at the pelvis, occasioning an enormous collection of pus. It was only very rarely that the characteristic odor was perceptible in the voided urine, though when the kidney was opened this was often met with. The diagnosis had to be made by culture, as the former idea that the colon bacillus can be readily recognized by the microscope had been proved erroneous. In any suspicious case the patient's urine should be examined microscopically, and if Gram negative bacilli were found, a culture should be made. There might or might not be some enlargement of the kidney. A radiograph was sometimes of value, but usually a kidney so little enlarged as to be undetected by palpation would show nothing on the plate. As soon as inflammation of one or both kidneys was suspected the patient should be kept in bed, and hot local applications made. Hexamethylenamine was our main reliance as a urinary antiseptic, and it should be pushed until free formaldehyde could be detected in the urine, or until 100 or 120 grains were given in the twenty-four hours. If under these doses no formaldehyde could be thus detected, the drug should be stopped, as it then had no germicidal action whatever, and some other urinary antiseptic, such as sodium benzoate or salol, tried. In some instances formaldehyde could be detected when only 7.5 grains of it had been taken by the patient. Burnam's

test for formaldehyde[1] guided us in determining the amount of hexamethylenamine to give, and also told us whether there was any use in continuing the drug. Burnam had shown that when this was not broken up it could be given in enormous doses without the slightest irritation or benefit either. He had also found that it was broken up almost as well in an alkaline as is an acid medium. In a small number of cases it had been noted that though there had resulted no appreciable benefit from the administration of full doses, notwithstanding the fact that the urinary examination had shown a fairly large percentage of formaldehyde, yet when the drug was stopped all symptoms at once subsided. Colon bacillus vaccines had been successfully used by a number of observers, but Doctor Ayres had never seen a case in which he thought they were indicated. Colon bacillus infection of the kidney was rarely of an acute type, and therefore early operation was not often demanded. Two weeks, or more, of such treatment as had been described should be allowed to pass before any surgical interference was to be considered. When palliative measures had failed, the ureters were to be catheterized, to determine the condition of both kidneys, and careful examination should be made to find if there was residual urine in the diseased kidney. After sufficient urine had been collected for observation the pelvis of the affected kidney should be gently flushed with hot boric acid solution until the return flow was fairly clear. If there were no abscess in the parenchyma this simple wash would usually reduce the size of the kidney markedly, the fever and subjective symptoms would subside, and, provided there were good drainage, the patient would entirely recover under this pelvic lavage. In the speaker's opinion, it mattered very little what antiseptic was used. He had employed boric acid in a routine way and, if it was determined to continue lavage, silver nitrate in mild solution at later sittings. Koll, of Chicago, had claimed specific anticolon bacillus action from a two per cent. solution of liquor plumbi acetatis. On the other hand, if we found residual urine in the renal pelvis, the patient would never be free from pyuria until the kidney had been removed. If the onset of infection were severe, or should the tentative lavage fail to benefit, the kidney should be exposed; when the surgeon would have to decide whether nephrectomy or nephrotomy were to be done. In all cases where the pelvis did not drain properly nephrectomy was indicated, unless a plastic operation could be done on the upper extremity of the ureter. If in the latter class of cases nephrectomy were for any reason contraindicated, pelvic lavage once or twice a week would clean the pelvis sufficiently to keep the patient comfortable.

Hydronephrosis.—Dr. A. ERNEST GALLANT, in this paper, said that displaced kidney was by far the most frequent cause of hydronephrosis or, more properly, uronephrosis, by which was understood retention of urine within the renal pelvis, or the renal pelvis and the ureter, in consequence of some obstruction to the outflow of the urine into the bladder. The range of the mobility varied very greatly, though the severity of the resulting suffering bore no relation to the degree of mobility or the distance to which the kidney had prolapsed. A case well illustrating what a prolapsed kidney might lead to was related. Among 411 cases of movable kidney Doctor Gallant had recognized obstructive hydronephrosis symptomatically in 126, or 30+ per cent. In one case there was sigmoid distortion of the ureter at its pelvic junction; in one, stricture of the pelvic portion of the ureter four years after hysterectomy; and in two cases a descending ureteral calculus was the source of typical ureteral colic; but such conditions were far outnumbered by the remittent attacks of hydronephrosis caused by movable kidney and which were relieved by loosening the clothing and lying down. By this means the kinking was corrected. Hence the pain, nausea, and vomiting (Dietl's crises) ceased, the swelling in the lumbar region subsided, and the woman passed large quantities of urine. Then there would be freedom from symptoms until the kidney had again dropped down low enough to cause ureteral kinking and urinary obstruction. During twenty years' observation of this class of cases it had always been his practice to place the patient in bed with the foot of the bed elevated some ten or twelve inches, and by this means had secured prompt relief, provided that the kidney could be wholly or in part replaced. Whenever this postural treatment failed he had found some complication present, such as gallstones, stricture, calculi, blood, etc. By thus elevating the pelvis we, 1, relieved the symptoms; 2, established the differential diagnosis; and, 3, ascertained the correct treatment required, whether medicinal, mechanical, or operative. As to the prognosis, temporary obstruction of the ureter might cause but little if any damage to the kidney tissues, but frequently repeated intermittent obstruction gave rise to dilatation and distortion of the ureter and renal pelvis, resulting in an interstitial nephritis. The research work of Edwin Beer and others had shown that continuous obstruction beyond twenty-one days caused irreparable damage to the kidney. The treatment advised by the speaker consisted in, 1, postural, diagnostic replacement; 2, mechanical support by a corset constructed on proper principles, in order to keep in position all the prolapsed organs; 3, appropriate operative measures for the removal of pelvic disease when present; 4, such rest cure methods and medicinal means as will restore the normal health balance. In cases of replaceable prolapsed kidney nothing was to be gained by suturing the kidney (nephropexy) because, as had been pointed out by Glenard, we very seldom met with movable kidney causing obstruction in which there was not an associated dilatation or prolapse of the stomach and colon; a condition far more detrimental to health, though the symptoms were not so acute. The paper was concluded with the report of an illustrative case in which there was a prolapsed right kidney, with remittent hydronephrosis, and ptosis and dilatation of the stomach. For these conditions the patient had worn the special corset advised by Doctor Gallant, and he said that she had learned by painful experience that the attacks would recur if she were careless in putting the corset on or did not keep it in good repair.

Bilateral Nephrolithiasis.—This paper, by Dr. OLIVER C. SMITH, of Hartford, Conn., will be published in the JOURNAL.

At the conclusion of the paper a number of lantern slides of illustrative radiographs were exhibited by Doctor Smith's associate, Dr. ARTHUR C. HEUBLEIN.

Dr. LOUIS HEITZMANN said he doubted the propriety of discussing Doctor Stern's paper, which was purely a theoretical one, in Doctor Stern's absence. The claim in it was more a theory of his own than a proved fact, and under the circumstances, therefore, he preferred to say nothing more about it. The subject of Doctor Ayres' paper was, unfortunately, one about which too little was known. Yet the cases of colon bacillus infection of the kidney were not rare. Doctor Ayres was of the opinion that all cases of this character were of hematogenous origin; but while he himself was sure that in the great majority of instances this was the case, he believed that we did have some cases of ascending infection. It was not always easy to prove that a case was of the ascending variety; yet when the bladder symptoms preceded those of the kidney, and when inflammation in the bladder had lasted for some time before there was any trouble in the kidney, as could be determined by microscopical urine examination, some evidence was afforded of such an ascending infection. This did not necessarily start in the bladder, but might arise in the vagina or elsewhere. Doctor Smith's paper was certainly one of great interest. If all skiagraphs of the kidneys were as plain as those which had been shown this evening, there would never be any difficulty in diagnosticating renal calculi. Unfortunately, however, the x ray in many instances proved entirely unreliable. When there were hematuria and pyuria, and we could exclude other causes, there was strong grounds for supposing that calculi was present. Wherever a ureteral catheterism could be made, as in hospital cases, this would aid in the diagnosis. The functional tests, in his opinion, were of little value, and the phenolsulphonephthalein test was decidedly unreliable. The examination of the specimen of urine sent him by Doctor Gallant indicated the presence of a mild interstitial nephritis, a condition proved by the kidney the doctor had presented. While by many it was not admitted, it was easy to diag-

[1] Add to the suspected fluid 3 drops of a 5 10 per cent. aqueous solution of phenolhydrazine hydrochloride and then 3 drops of a five per cent. aqueous solution of sodium nitroprusside; then an excess of a saturated aqueous solution of sodium hydroxide. When formaldehyde is present in solution of one to 20,000, or stronger, there follows an intense blue color, which gradually changes to green and then after a few minutes to brown.

nosticate the existence of such a nephritis by microscopical uranalysis, without the presence of casts in the urine.

Dr. Robert T. Morris said it made very little difference whether the colon bacillus infection came by means of the blood, the lymphatics, or by ascending infection. Usually, however, it originated from the blood. The thing to do was to relieve the patient, since the presence of the wandering colon bacillus in the body generally meant sepsis. Still, it was a fact that in many instances its presence in the kidney was a matter of little or no moment. Fortunately, we had at our command a good resource for this infection, provided it was used in the right way. The correct method of giving employing urotropin depended on one or two little refinements, and one of these was to give it in conjunction with sodium benzoate. We had a still better remedy in the new methylene citrate, which was an improved preparation of urotropin. In regard to kidney stone, there were some instances in which the calculi were nearly pure uric acid, giving no shadow. Now, whether the x ray showed the presence of stone or not, when we found blood and pus coming from a kidney, there was something there which called for operation. If not stone, it might be tuberculosis, or even fatty degeneration, as in one case he had seen. As a rule, patients operated upon made a good recovery, but occasionally even what seemed to be the most favorable cases terminated fatally. This it had been his melancholy experience to see only last week, when a lady who presented every appearance of perfect condition died suddenly from embolism three hours after the operation.

Dr. Joseph Friedmann said that one of the reasons why renal calculus was not more often diagnosticated by means of the x ray was because of faulty technic. The intestinal tract of the patient should first be thoroughly cleared out. It was his practice to give a full dose of castor oil in the evening, and repeat it the next day. The patient should be placed on a liquid diet, though milk should be excluded, as this substance caused a shadow to appear in the colon. Then, about two hours before the radiograph was taken an enema should be administered. A good picture ought to give the outline of the kidney, but often this was not obtained. It was always best to confirm the diagnosis of kidney stone, and therefore a second radiograph should be taken three or four days later. If the shadows at first observed were then in the same position, we could feel that the diagnosis was assured.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, Held at the New York Academy of Medicine, January 7, 1913.

The President, Dr. L. Pierce Clark, in the Chair.

A Case of Cholesteatoma of the Brain.—Dr. I. Strauss reported this case and showed the specimen. The patient was a woman, thirty-two years old at the time of her death, who was admitted to the Mt. Sinai Hospital October 5, 1909. The patient was one of twins; the other was healthy. One brother was mentally deficient. The patient's past history was unimportant. Her present illness dated back to the birth of her second child, when she began to have menstrual disturbances, having periods every two or three months. During this time she became obese. She complained of headache, and about five months after the birth of her last child she first showed signs of mental derangement. She lost her memory and talked garrulously and incoherently, and was committed to an asylum in Central Islip, where she remained about nine months. Since her return home her headaches had increased in severity and recurred more frequently. She often vomited small quantities of food; vomiting not projectile in character. For the past six months she had gnashed her teeth almost continually. Her eyesight had been gradually growing poorer. Her memory was fair, but she forgot recent happenings and took very little interest in current events; complained of pain in the jaws and of some difficulty in chewing and swallowing; was also subject to earache. She had great thirst, drank considerably and voided copiously; perspiration profuse; bowels constipated. She had not menstruated in four months. She continued to gain weight, although not as rapidly as formerly. The patient's facial appearance, at time of admission, was suggestive of acromegaly. The lips were thick, the upper jaw seemed wider than normal, and her nose was thick and broad. The teeth were regularly placed, and ground down from the constant gnashing. The hair was coarse and sparse; a considerable growth on upper lip; axillary and public hair likewise sparse. Her mentality was dull and sluggish; memory was very deficient. The blood pressure was 90, and the temperature average about 98.3° F. There was some atrophy and weakness of the right leg, with diminished reflexes, suggestive of an old anterior poliomyelitis. Glycosuria was present. The fundi were negative, although, on account of the restlessness of the patient, neither a satisfactory examination of the visual fields nor an x ray could be made. The diagnosis of pituitary tumor was made, based on the early appearance of Froelich's syndrome, the character of the facies, and the symptoms of increased intracranial pressure. The unusual feature was the development of a true diabetes. In April, 1910, the patient was transferred to the Montefiore Home, where it was ascertained that she had a positive Wassermann reaction in the blood (negative in the cerebrospinal fluid), and that there was not much doubt that her husband had been luetic. At this time the right eye showed atrophy of the disk; the left a commencing atrophy, and there appeared to be a bilateral temporal hemianopsia. She remained in a stationary state for some time, when she suddenly became somnolent and a marked edema of the face and lips developed. She came out of this state after a few days and was given an intramuscular injection of salvarsan. The improvement in her mental condition produced by this was very remarkable: She took cognizance of her surroundings, her memory improved, she thanked the physicians for what they had done for her and felt sure that she could return home in a short time. The glycosuria gradually disappeared, and she was maintained on an antidiabetic diet. Six months later there again suddenly appeared an extensive edema of both upper eyelids. There were subconjunctival hemorrhages, the pupils were moderately contracted, and she became comatose, with stertorous breathing, loss of all reflexes, and incontinence; no sugar. A phlebotomy was performed, sodium bicarbonate and duretin were administered, and in two days the edema had disappeared. The patient came out of her coma and was mentally clearer then she had been in six months. During the succeeding three months she was given several injections of salvarsan, together with mercury in different forms. She remained fairly clear mentally and her general condition was good. Sugar was absent for considerable periods of time, and if present, it was only in small amounts. There was very little headache or dizziness. Early in December, 1911, she became semistuporous and slept a good deal. The stuporous condition became more marked, and death occurred on December 21st. At the autopsy, which was confined to the head, a tumor was found on the under surface of the brain, a cystic and gelatinous mass, extending from the medulla at the inferior level of the olivary bodies forward as far as the optic chiasma. The main prominence of the tumor presented itself on the left side of the pons, in the interpeduncular space. The tumor compressed the pons, especially on the left side, also some of the right half of the pons had been destroyed. The tumor extended forward into the frontal lobe almost to the frontal pole on a level with the second frontal convolution; it measured about five cm. in its longest diameter, from above downward; its greatest width was four cm. The hypophysis seemed to be of about normal size, but somewhat flattened. Microscopically, the growth proved to be a cholesteatoma, possibly of embryonal origin.

A Case for Diagnosis.—Dr. Foster Kennedy presented a married woman, thirty-five years old, who had enjoyed good health up to about one year ago, when she began to suffer from severe headaches; six months later there were intense attacks of vertigo, with frequent vomiting. Three weeks ago she first noticed that her left eyelid drooped, and that there was weakness of the left face, which became twisted when she laughed. She now complained of severe headaches, intense dizziness, frequent vomiting, and incomplete paralysis of the left third nerve. Reflexes normal; no ataxia; speech normal; Wassermann reaction gave negative results in blood and cerebrospinal fluid; slight inequality of the pupils, the left being smaller

and more sluggish than the right; no nystagmus. Doctor Kennedy said this patient had been under his observation for only a short time, and he had made a very tentative diagnosis of pontine tumor.

Dr. I. ABRAHAMSON said this case recalled to his mind that of a child that was brought to the clinic with a paralysis of the sixth and seventh nerves on the right side, followed, in the course of two weeks, by headaches of increasing severity. The symptoms were first regarded of peripheral origin. Subsequently, the child had a convulsion, with hyperesthesia and rightsided paralysis, the symptoms pointing to a pontine tumor. The patient was growing progressively weaker, and a fatal outcome was expected. In another case, which he had presented at a previous meeting of the society, the patient was a woman with a progressive bilateral ophthalmoplegia externa. She gave a history of severe headaches, followed by ptosis ard weakness of one side of the face. After temporary improvement a similar condition on the opposite side of the face developed. The headaches were of an intermittent character. In Doctor Kennedy's case he was inclined to believe there was a neoplasm involving the pons.

Dr. WILLIAM M. LESZYNSKY suggested that the symptoms were due probably to a syphilitic basal meningitis.

A Case of Extracerebellar Tumor; Operation; Recovery.—Dr. FOSTER KENNEDY reported the case of a boy, nineteen years old, who was admitted to the New York Neurological Institute June 12, 1912. The history obtained was that he had always been bright, but not overstudious. He was fond of music, and quite an accomplished violinist. His general health had been good. Four years ago he received a severe blow on the head, and at that time it was noticed that his right upper eyelid drooped. When a small boy he told his father that he could not see through a pair of opera glasses with both eyes, and at a subsequent examination, made by an oculist, it was said that the sight of his right eye was practically gone. There was no history of headaches nor convulsions during infancy or childhood. The boy's present illness dated back to March 18, 1912, when he attended a party and ate a good deal. On the following day he complained of persistent headache, at first in left temporofrontal region; the pain extended later to left side of face and neck. The headache had persisted more or less constantly, and he had vomited once. Early in May it was noticed that he could not play the violin well, owing to inability to grasp with the left hand. A few days later he wobbled in walking; this symptom became more pronounced, and the father stated that the patient fell to the left. About two weeks later he had a severe vomiting spell, with much pain in the head; since then he had vomited four times, always late at night. When Doctor Kennedy first saw the patient, June 10, 1912, an examination of the eyes showed a chorioiditis, with heaping of retinal pigment in the right eye, and the pupil was more sluggish than that of the left. There was occasional slight nystagmus, always to the left; slight infranuclear weakness of left face, with deviation of jaw to same side; ataxia of left arm and leg, with a tendency to fall to left side; no sensory changes found. On June 14th patient complained of severe headache, more frontal than occipital, and there was marked projectile vomiting. The eyes now showed definite blurring of the disks, with small striate hemorrhages; pulse was slow; left knee jerk slightly more active than right. On June 5, 1912, patient was operated upon by Dr. Charles A. Elsberg, the idea being to relieve intracranial pressure. Upon making an opening over the left occipital region there was enormous pressure, and the left cerebellar lobe immediately protruded to such an extent that it was almost strangulated before the dura could be incised. The left cerebellar lobe was then seen to be apparently the seat of an infiltrating tumor, apparently a glioma, extending from before backward. Some of this tissue was removed, and the wound closed. Patient made an uneventful recovery from the operation, with the exception of a slight rise in temperature, with occasional vomiting, on the fourth day. On July 2d the ataxia was less marked and there was general improvement; no pain nor vomiting; patient able to sit up voluntarily without effort or dizziness. He left the hospital July 6th. His present condition was entirely satisfactory, and he had resumed his violin practice. Microscopical report: No gliomatous tissue was found in the specimen, so that the good result in this case was entirely produced by a simple decompression, the growth being still in front of the exposed cerebellar lobe.

The president, Doctor CLARK, said that in dealing with slow growing tumors of the cerebellum, especially in early life, it was difficult to say just what was going on either in the tumor or cerebellum itself by the symptoms presenting, as the frontal lobes of both sides were closely connected with both cerebellar lobes and had reciprocating functions. Though the cerebellum made little recovery after tumor removal, it was quite possible for the frontal brain to take up cerebellar functions of equilibration and defective muscle tonus and regulate the same through the cerebrocerebellar pontine tracts.

A Case of Acoustic Neuroma.—Dr. I. ABRAHAMSON presented a girl, nineteen years old, who had suffered from headaches and tinnitus for over two years. Subsequently she complained of vomiting, vertigo, and increased noises in the left ear, with diminution of hearing, and, for four months past, of visual disturbances, with gradual loss of sight. Gait unsteady, with staggering toward left; vision of left eye less than that of the right; for the past two months, amenorrhea. Examination of eyes showed double choked disk, with consecutive atrophy, most marked on the left side; coarse nystagmus to extreme left, less marked to the right; pupils large, some reaction to light present. Smell impaired; taste normal; corneal hyperesthesia; right face was flattened; spasm of left face; hearing very defective on left side; on the right side, somewhat diminished. The head was held in the left cerebellar attitude; there was a cerebellar gait, with a tendency to fall mainly to the left. No hypotonus; no ataxia; some weakness on right side; sensation intact; sphincters normal; deep reflexes slightly increased; no Babinski sign; Wassermann reaction negative. The symptoms in this case, he said, were typical of an acoustic neuroma. Because of the advanced optic neuritis, the advisability of an operation was doubtful.

The following officers were elected for the ensuing year: President, Dr. Smith Ely Jelliffe; vice-president, Dr. E. W. Scripture; corresponding secretary, Dr. J. Ramsay Hunt; recording secretary and treasurer, Dr. C. E. Atwood.

Letters to the Editor.

ON MEMBERSHIP IN THE COLLEGE OF SURGEONS.

CHICAGO, *June 10, 1913.*

To the Editor:

Since the organization meeting of the College of Surgeons of America many inquiries have been received as to the method of procedure required to attain fellowship in this organization.

To the fifteen surgeons comprising the Board of Regents, representing territorially all sections of the North American continent, has been intrusted the delicate task of formulating a membership plan, to include the reception of applications for membership and the final election to fellowship in the college of those fulfilling the standard of requirements. The founders of the college conferred upon the Board of Regents almost unlimited freedom of action in carrying out this preliminary work.

While it is true that three classes of surgeons were declared eligible to election to fellowship in the college immediately, the resolutions dealing with each of these classes provided that each individual thus named shall be confirmed by the regents before he can be formally declared a Fellow of the college.

These three groups include the surgeons and men practising surgical specialties who have been in the practice of their specialty for a considerable length of time and who are recognized as surgeons of established reputation. They are divided for convenience into three classes: Class A, men who were chosen to organize the college by the Committee on Foundation; Class B, surgeons who are members of one of the fifteen national organizations of surgeons and surgical specialties which are designated as constituent societies; Class C, surgeons of prominence not included in Class A and not affiliated with any of the societies represented in Class B.

For Class D, which will include all other candidates, namely, young men recently graduated in medicine who wish to practise surgery as a specialty, and men who have been in the practice of medicine for a longer period and are desirous of developing a surgical specialty, a special committee of the Board of Regents is carefully preparing a standard of requirements for admission, and this plan will be presented for the approval of the governors at the November meeting.

Of the A, B, C, and D classes of members, the first three classes will be subject to consideration during the next six months, and while the men in these classes have been declared eligible to immediate membership, the Board of Regents has taken measures to subject these names to the same careful scrutiny that will be employed in the selection of members from Class D.

No man will come before the Board of Regents for final election to fellowship until the applicant has made a formal statement in writing that he is desirous of becoming a member, such application to be accompanied by the membership fee.

Surgeons representing Classes A, B, and C will receive notice that they are eligible under the by-laws, and on request will be sent blanks upon which they can make their applications.

Surgeons who come under Class D, and in this class is included all legalized practitioners who are desirous of becoming members, will be furnished blanks by the secretary upon which they may make their applications, which in due time will be carefully considered by the Board of Regents.

It is the desire of the present Board of Regents to establish the precedent that any applicant for fellowship in the college will receive the fullest consideration.

Finally, when a surgeon's original application has been passed upon favorably by the Committee on Credentials, he will be sent a fellowship blank upon which he may make his declaration of acceptance of the principles of the college, together with such other data and information as the regents may require as a matter of record. The applicant will then be duly elected by the Board of Regents a fellow of the College of Surgeons of America.

FRANKLIN H. MARTIN, M. D.,
General Secretary.

CONTROL OF POSITIVE WASSERMANN RESULTS.

THE NEUROLOGICAL INSTITUTE, NEW YORK CITY,
June 8, 1913.

To the Editor:

In my article "Control of Positive Wassermann Results," appearing in your issue of June 7th, the following mistake appears. The wording under the photographic illustration of apparatus used reading "Apparatus used in Doctor Van Slyke's method of controlling Wassermann results" should read "Doctor Van Slyke's apparatus for estimation of N used by author in control of Wassermann results." This error is an omission on my part, due to my failure to correct proof. If you will kindly make note of the error, it will be much appreciated.

D. M. KAPLAN, M. D.

Book Reviews.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

Lang's German-English Dictionary of Terms Used in Medicine and the Allied Sciences. Second Edition, Edited and Revised. By MILTON K. MEYERS, M. D., Neurologist to the Jewish Hospital Dispensary and to St. Agnes's Hospital Dispensary, Philadelphia, etc. Philadelphia: P. Blakiston's Son & Co., 1913. Pp. vii-564. (Price, $5.)

We doubt whether it will be ever possible to compile a perfect medical dictionary of English and foreign languages. The present edition of Lang's German-English Dictionary shows the usual incompleteness and incorrectness which are not so much the fault of the author as of the object itself. The literature of the German medical journals is very large, as these journals appear not only in Germany but also in Austria, Switzerland, Sweden, Finland, Hungary, Russia, our own country, etc. Thus, new words are permanently coined and the German medical terminology thus formed is very often to the detriment of the language and offers a poor testimony of the philological sense and education of the author. The present edition contains, indeed, a great number of words, but we are convinced that the book could easily have been reduced, with advantage, to at least one third its present size. Repetitions are found in great numbers, and combinations of words have been carried to an absolutely unnecessary accumulation. Some minor misprints also occur, for example: "glottis-erwiderer," etc. The print is clear and precise, and the makeup is good.

Etudes d'endocrinologie. Par Docteur NAAME. Paris: A. Maloine, 1913. Pp. 74.

Organotherapy is classed by the author as a branch of antibactericidal therapy. Basing his views upon the views of Gilbert, Hutinel, Sergent, Starling, Sajous, Paulesco, and other modern investigators, he presents a summary of the application of the method and clinical examples of its practical value. Many features of this monograph are suggestive.

Le Gout et l'odorat. Par L. LARGUIER DES BANCELS. Questions biologiques actuelles. Collection de monographies publiées sous la direction de M. A. Dastre, membre de l'Institut, professeur à la Sorbonne. Paris: Librairie scientifique A. Hermann & Fils, 1912. Pp. 94.

In this monograph an effort is made to coordinate the numerous and varied researches upon the physiology of the senses of taste and smell. The sensations awakened, the nature of the excitants which through the olfactory and gustatory areas evoke sensory impressions, etc., are reviewed in an exceedingly instructive manner, with modern investigations as groundwork.

General Chemistry of the Enzymes. By HANS EULER, Professor of Chemistry in the University of Stockholm. Translated from the Revised and Enlarged German Edition by Thomas H. Pope. First Edition. First Thousand. New York: John Wiley & Sons, 1912. Pp. ix-323. (Price, $3.)

This work is an excellent translation of the author's studies of the enzymes published at various times in technical journals. Being intended particularly as an aid to scientific research in enzymology, the book is necessarily technical; yet when we recall the importance of the action of pepsin in the gastric juice, of trypsin in the intestinal canal, of cytase in the phagocytes, and other active agents in biological activities which the physician meets at all times and on all sides, it becomes evident that a close study of this work by so competent a biological chemist will prove of great value.

Thérapeutique des maladies infectieuses. Par les docteurs M. GARNIER, médecin des hôpitaux de Paris, NOBÉCOURT, professeur agrégé à la Faculté de médecine de Paris, NOC, médecin major du service de santé des troupes coloniales, et P. LEREBOULLET, médecin des hôpitaux de Paris. Avec 19 figures dans le texte. Bibliothèque de thérapeutique publiée sous la direction de A. Gilbert et P. Carnot. Paris: J. B. Baillière et fils, 1913. Pp. lv-639.

The older conceptions of the infectious diseases have undergone considerable transformation in recent years; bacteriotherapy, resotherapy, the initiators of active immunization, have ranged themselves besides antisepsis. The present work is an admirable review of these truly scientific advances. The exanthemata and also pertussis, parotiditis, diphtheria, tetanus, typhoid fever, acute articular rheumatism, influenza, erysipelas, cerebrospinal meningitis, bacillary dysentery tuberculosis, and infantile syphilis being considered from the standpoint of therapeutics, and the tropical diseases are admirably studied through the light newer methods have shed upon them. On the whole, the work is a credit to its authors, and, being well bound (an exception in foreign books) likewise to its publishers.

The Carrier Problem in Infectious Diseases. By J. C. G. LEDINGHAM, M. B., D. Sc., Chief Bacteriologist, Lister Institute of Preventive Medicine, London, and J. A. ARKWRIGHT, M. D., Assistant Bacteriologist, Lister Institute of Preventive Medicine, London. (International Medical Monographs. General Editors, Leonard Hill, M. B., F. R. S., and William Bulloch, M. D.) London: Edward Arnold; New York: Longmans, Green & Co., 1912. Pp. vii-319. (Price, $3.50.)

That this is a timely book hardly needs to be emphasized. It treats of one of the promising lines of epidemiology which cannot but serve to extend materially the prophylaxis of infectious diseases. In selecting but six diseases as the objects of their investigation, typhoid and paratyphoid, diphtheria, epidemic cerebrospinal meningitis, dysentery, and cholera, the authors not only showed considerable discernment, but were able to produce a very satisfactory work; the subjects treated being those upon which sufficient exact knowledge is available to afford appreciable elucidation. The amount of material collected by the authors and their own contributions to the subject give the book exceptional value.

Le Problème physiologique du sommeil. Par HENRI PIÉRON, directeur du Laboratoire de psychologie physiologique de la Sorbonne. Paris: Masson et Cie, 1913. Pp. xv-520.

The study of sleep, so rich in physiological researches and yet so poor in results, has received twelve years of the author's attention. Owing to the many contradictions with which the subject is studded, he undertook an analysis of its foundations through comparative physiology, hibernation, and other forms of seasonal peculiarities of this function. The multitude of theories as to the physiology of sleep or hypnosis are carefully analyzed, and shown experimentally to be wanting. The biology of sleep; its circulatory and respiratory phenomena; its relationships with digestion and secretion, thermogenesis; its sensory motor phenomena; states analogous to sleep; narcolepsy, lethargy, somnolences, narcosis, hypnosis; morbid sleep; insomnia; fatigue; the relations of sleep to intoxications, are studied in turn. The author reaches no fixed conclusion, though the trend of his labors suggest that sleep is due to the presence of a toxic hypnotoxine capable of inhibiting functional activity. On the whole, this work is, without question, one of the most satisfactory on the subject that literature affords.

Meetings of Local Medical Societies.

MONDAY, *June 16th.*—Medical Society of the County of Erie, N. Y.; Elmira Clinical Society; Hartford, Conn., Medical Society.

TUESDAY, *June 17th.*—Buffalo Academy of Medicine (Section in Obstetrics and Gynecology); Medical Society of the County of Kings, N. Y.; Syracuse Academy of Medicine; Ogdensburgh Medical Association; Oswego Academy of Medicine; Clinical Society of Elizabeth, N. J., General Hospital.

WEDNESDAY, *June 18th.*—Medicolegal Society; Buffalo Medical Club; Northwestern Medical and Surgical Society of New York; New Haven, Conn., Medical Association; New Jersey Academy of Medicine (Jersey City).

THURSDAY, *June 19th.*—German Medical Society, Brooklyn; Newark, N. J., Medical and Surgical Society.

FRIDAY, *June 20th.*—Brooklyn Medical Society; clinical Society of the New York Postgraduate Medical School and Hospital.

Official News.

United States Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending June 7, 1913:

Baker, M. C., Passed Assistant Surgeon. Detached from the *Colorado* and ordered to the *Pittsburgh.* **French,** G. W. R., Assistant Surgeon. Ordered to the Naval Hospital, New York, N. Y. **Halsey,** W. H., Assistant Surgeon. Ordered to the *Montgomery.* **Kerr,** W. M., Passed Assistant Surgeon. Detached from the Naval Hospital, New York, N. Y., and ordered to the Naval Station, Honolulu, H. T. **Ledbetter,** P. B., Assistant Surgeon. Detached from the Naval Hospital, Olongapo, P. I., and ordered to the *Pompey.* **Rider,** C. E., Passed Assistant Surgeon. Detached from the *Pompey* and ordered to the Naval Hospital, Olongapo, P. I. **Smith,** G. T., Surgeon. Detached from the Naval Station, Honolulu, H. T., and ordered home to await orders.

Births, Marriages, and Deaths.

Married.

Diament—Harwood.—In Bridgeton, N. J., on Monday, June 2d, Dr. Edward L. Diament and Mrs. Anna Harwod. **McCall—Spencer.**—In Naugatuck, Conn., on Saturday, June 7th, Mr. William E. McCall, Jr., of Philadelphia, and Dr. Elizabeth C. Spencer, of Norristown, Pa. **Reynolds—Nixon.**—In Baltimore, on Sunday, June 1st, Dr. Calvin Louis Reynolds and Miss Amelia G. Nixon. **Schilling—Lever.**—In Philadelphia, on Wednesday, June 4th, Dr. Francis Marion Schilling and Miss Lydia Lever. **Scott—Van Zile.**—In New York, on Tuesday, June 3d, Dr. Walter F. Scott, of Birmingham, Ala., and Miss Sally Van Zile. **Yarbrough—Ramsey.**—In Charlottesville, Va., on Saturday, May 31st, Dr. Henry C. Yarbrough and Miss Blanche Ramsey.

Died.

Baker.—In Pittsburgh, Pa., on Wednesday, May 28th, Dr. Hugh Baker, of Connellsville, aged forty-six years. **Beach.**—In Milford, Conn., on Monday, June 2d, Dr. Edward Beach, aged forty-seven years. **Crane.**—In Lowville, N. Y., on Monday, June 2d, Dr. Frederick A. Crane, aged seventy-two years. **Ellaby.**—In South Park, Ky., on Tuesday, June 3d, Dr. Ernst M. Ellaby, aged thirty-seven years. **Forchheimer.**—In Cincinnati, Ohio, on Sunday, June 1st, Dr. Frederick Forchheimer, aged sixty years. **Gilday.**—In New York, on Saturday, May 31st, Dr. Walter C. Gilday, aged forty-three years. **Green.**—In Holt, Mich., on Saturday, May 24th, Dr. George D. Green, aged sixty-five years. **Harrison.**—In San Antonio, Texas, on Sunday, May 25th, Dr. John Tyler Harrison, aged forty-seven years. **Holman.**—In San Saba, Texas, on Sunday, May 25th, Dr. George P. Holman, aged sixty-five years. **Holt.**—In Grand Rapids, Mich., on Monday, June 2d, Dr. Charles H. Holt. **Jones.**—In Boston, on Thursday, June 5th, Dr. George W. Jones, of Cambridge, aged sixty-four years. **Lauder.**—In Bridgeport, Conn., on Saturday, May 31st, Dr. Robert Lauder, aged seventy-two years. **McCauley.**—In Yellow Springs, Ohio, on Sunday, June 1st, Dr. John McCauley, aged eighty-seven years. **McEvoy.**—In Stamford, Conn., on Monday, June 9th, Dr. James P. McEvoy. **Pitman.**—In Kirkwood, Mo., on Thursday, May 29th, Dr. John Pitman, aged seventy-six years. **Relihan.**—In Chicago, on Saturday, May 31st, Dr. Harry J. Relihan. **Reppert.**—In Rockford, Ill., on Thursday, May 29st, Dr. Lyell Reppert, of Muscatine, Iowa, aged thirty-seven years. **Ring.**—In Arlington Heights, Mass., on Tuesday, June 3d, Dr. Allen Mott Ring, aged sixty-eight years. **Risk.**—In Summit, N. J., on Saturday, May 31st, Dr. James Boyd Risk, aged fifty years. **Shockey.**—In Columbus, Ohio, on Monday, May 26th, Dr. John W. Shockey, aged sixty-eight years. **Spear.**—In Wilmington, Del., on Monday, June 2d, Dr. Owen C. Spear, aged forty-nine years. **Stone.**—In Bay City, Mich., on Friday, May 16th, Dr. David E. Stone, aged seventy years. **Turner.**—In Richmond, Va., on Monday, June 2d, Dr. John Daniel Turner, aged eighty years. **Wickman.**—In San Rafael, Cal., on Thursday, May 29th, Dr. William J. Wickman, aged fifty-eight years. **Winslow.**—In London, England, on Sunday, June 8th, Dr. L. Forbes Winslow, aged sixty-nine years.

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Original Communications.

THE CANCER RESEARCH INSTITUTE.*

By J. G. ADAMI, M. D., Sc. D., LL. D., F.R.S.,
Montreal,
Professor of Pathology, McGill University.

I have been asked to speak upon the subject of the Cancer Research Laboratory or Institute, and find myself in the uncomfortable position, despite the best of intentions, of being able only to utter mere commonplaces. For, the more I have thought over the matter, the more it has impressed itself upon me that the recommendations that I can make are such as are already being carried out at the present moment in this city of New York; my conclusions must therefore be familiar to all here present who are interested in the subject.

The primary, as it is the ultimate, object of cancer research, is, let me emphasize, the discovery, not of the cause of malignant new growth, but of the means whereby humanity may be protected against this, its most awful scourge. Keeping this in mind, it will be seen that there are two methods of attack, both logical, both scientific, and it is for us to determine which promises the better results, the fuller and richer fruit. These I may term the direct and the indirect methods. Of the value of the former Ehrlich has recently afforded us a unique and triumphant demonstration. It is the method of experimental chemotherapy, and consists in this, that having first selected some drug or substance of known chemical composition, seen to possess a definite although imperfect influence upon the course of a particular disease, the investigator, with his corps of chemical assistants, proceeds to elaborate a succession of compounds of this primary substance with various radicals, and with his pathological assistants tests the relative value of these new compounds *seriatim* upon animals of the laboratory inoculated with the disease in question.

The research may be most laborious; hundreds of compounds may have to be devised, tested, and rejected, but it is a reasonable expectation that gradually in the course of all these trials certain groupings or radicals will be encountered presenting definite and specific action upon one or other phase of the particular morbid process, and that eventually some permutation or combination of such substance or substances will be discovered which will effectively destroy the causative agent within the tissues, or arrest the morbid process without coincident grave injury to the tissues of the individual. As all know, this is the method which is being followed by Wassermann and his coadjutors at the present moment at the Berlin Gesundheitsamt, and that with a certain measure of reported success in regard to cancer of the animals of the laboratory. It is a method which does not wait for preliminary studies upon the etiology and life history of cancerous and other new growths; it is a purely therapeutic method, even if at the same time purely experimental.

But it is by means of the other or indirect method that scientific medicine in our generation has scored its most notable triumphs. It is the method based upon the old Baconian aphorism, "Vere scire est per causas scire"; it is the etiological method. It may be laid down with a confidence so absolute that it becomes a truism that the extraordinary advances that have been made in the treatment and control of tuberculosis, diphtheria, and other infections during the last thirty years date from the moment at which the causative agents of these diseases became determined, or, failing that (as in the case of yellow fever), date from the time when, employing rigid analogy, the nature of the disease became realized; that is to say, the detection of the cause of one disease threw light upon the mode of prevention of an allied disease. Nay, more, without any depreciation of Ehrlich's most notable achievement, and without minimizing our admiration for the prodigious labor that led up to the discovery of "606," we must, I think, admit that even in Ehrlich's hands the direct method could not have succeeded but for the previous discovery of the causative agent of syphilis. It was the discovery of trypanosomes and treponemes, the fact that they can be detected in the blood or in the tissues, that made it possible to determine surely the influence of one after the other of the long series of compounds that was elaborated and tested. It is noteworthy that our knowledge of the therapeutic action of Jesuit's bark, or quinine, in relationship to malaria, dates back to the seventeenth century, but, notwithstanding this knowledge, it has only been in our own generation, only since Laveran's discovery of the malarial parasite, and Ross's elucidation of its life history, that we have been able to make the Isthmus of Panama and the New Jersey coast decently habitable.

Thus, while admitting that what may be termed the "Ehrlich method" pure and simple may give good results, I have grave doubts whether, applied to cancer, of which admittedly the causation is still

*An address delivered at a stated meeting of the New York Academy of Medicine, May 15, 1913.

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undetermined, it can promise us anything in the nature of a full control of the situation. The bulk of scientific workers must, I imagine, be with me when I lay down that the indirect method of attack is that which should be selected, and that the ideal institute for cancer research must approach the solution of the problem by investigation into the nature of the process, into the nature of normal cell growth, into the life history of malignant growths, and so into the cause or causes of neoplasia. It is this course of action that promises most for the benefit of humanity.

Admit, then, that an institute along the latter lines is the better. Admit also that, despite the labors of a generation of multitudinous investigators, the cause of cancer is still undetermined. How are we to proceed? This, I think, will be accepted by all sensible men that the frontal attack offers little promise of success. It has been attempted too often with constant repulse. In other words, the energies of the institute and its staff must not be devoted to immediate endeavors to determine the cause. It is evident that the position has to be invested from all sides and thoroughly undermined; this course alone would seem to favor eventual success. And, to continue the metaphor, the question for us to determine is whether the ideal institute should regard itself as a single corps of the investing army, and as such devote itself to carrying forward the siege works against one particular aspect of the position; or on the contrary, whether it should be of the nature of headquarters for the staff, from which qualified men can be sent out to direct operations against the besieged, some on this side, others on that. There is much to be said in favor of each mode of procedure. The ultimate decision must depend upon the size of the war chest, as also I should add, upon the officer chosen for command. A man may be a superb regimental officer, but as a general in command may be a notable failure. Nevertheless, however brilliant the abilities of the commander, if the amount of money for the campaign placed at his disposal is so small that he can have but few men under him, it stands, I think, to reason that he is likely to accomplish more by concentrating their work and their efforts upon one particular line of attack than by frittering their energies in several directions. And here the director of the institute is exposed to a dangerous temptation. Those who have provided the war chest desire to see results; it requires no little strength of mind to concentrate upon one particular line of attack with the full knowledge that it may very possibly turn out to be futile; there is a distinct temptation in the circumstances to indulge in warfare of a more guerrilla type, knowing that if there are frequent repulses, there may from time to time be brilliant inroads upon the enemy's position. Now cancer research, to be well conducted, necessitates heavy expenditure, expenditure extending over long years; so heavy that, in general, I would lay down that the institute is most likely to be of service if it takes up one or at most two lines of work. The Imperial Institute for Cancer Research in London, for instance, may not have discovered the cause or mode of arrest of cancer, but it has done most valuable work by its accumulation of statistics of cancer incidence in different parts of the world, and among the lower animals. Thereby it has undoubtedly cleared the path and prepared the way for a more accurate understanding of the problem before us. Ehrlich's laboratory, devoting itself as it did for so many years, to a study of transplantation of tumors in the lower animals, has not, it is true, discovered the source of those tumors, but undoubtedly has added most valuable knowledge of the life history of malignant growths; confirmed and extended as it has been by the concentrated work accomplished by the British Imperial Institute. At St. Louis good work is being accomplished by studies upon the biology of the cell and its reactions to various stimuli. Nor has the frontal attack directed from the Gratwick Laboratory been other than most valuable. If Doctor Gaylord and his associates have failed to discover the causative agent of cancer, they have done yeoman service by the method of exclusion; they, too, have cleared the path. The same may be said with regard to the work of the institute under Professor Czerny at Heidelberg; if it has not discovered a cure for cancer it has done work of the highest value in testing and excluding reputed remedial methods. All must admit that through the work of these institutes, which tend to concentrate their energies upon the elucidation of particular problems, and, let me add with full appreciation, through the work of those other institutes and agencies like the Middlesex Hospital Cancer Research Laboratory, and the Harvard Cancer Commission, which have indulged in a more guerrilla warfare, we to-day have a much fuller knowledge of very many aspects of the problem than we possessed ten years ago; we are in a position to direct our endeavors far more methodically and more serviceably than at any previous period.

If, however, there be abundant funds, the ideal institute in a centre such as this, a centre possessing also abundant expert research workers in various branches of biology, may profitably, and indeed preferably, embrace the wider scheme, and may gather to it experts of all orders to make a combined attack from many sides. In such a great centre as New York, what I believe to be the plan outlined by Columbia University, under the Crocker bequest, and arrived at independently, I believe, by the Cornell authorities, appears to me to be admirable. I am only conversant with the bald outlines of the scheme; it is possible, therefore, that what I am about to say may not in its details fully conform to what is here being carried out. But briefly, my ideal for a cancer research institute in a great and wealthy city is a combination of an institute and what at Harvard they term a "commission," such as shall utilize to the fullest all possible means of attack. There must, I would lay down, be a central institute or administration building. This need not, it is true, be of great size, but should contain a library where should be collected all modern literature bearing upon cancer research, a director's office, and a suite of laboratories and animal rooms for the use of those making investigations in association with, or under, the immediate direction of the head of the institute. And, whether in the library or elsewhere, there should be a conference

chamber for the periodical gathering together of workers to report upon and discuss the researches of members of the staff and the work being accomplished elsewhere. I have very decided views regarding the value of informal conferences of this nature; it is by combined effort that success is most likely to be obtained, not by isolated and secretive studies of individuals working for their own glory and their own advancement rather than for the reputation of the institute of which they are members, and the greater good of humanity. This may appear to some altruistic, but it is my experience that the success of a scientific institute is in direct ratio with the *camaraderie* therein manifested; and undoubtedly such free discussion of particular problems, by men who are working along very different lines, time and again results in valuable suggestions being offered and side lights thrown upon the subject by those whose work is of a wholly different order. It is at the *Grenzgebiete,* or perhaps more accurately at regions where work circles intersect, that the richest scientific results are obtainable. Time and again, for example, the physicist and the chemist, by their expert knowledge, can help the biologist, the histologist, and the microchemist, and can elucidate the results or note conditions in the tissues which strengthen the conclusions of the physiological chemist, or direct him along a fruitful line of enquiry. I need not say that the development of this *esprit de corps* depends essentially upon the influence of the head of the institute.

A desideratum of equal value is either a separate hospital or, what is often simpler, certain wards in a hospital already existing, in which beds are given over to cancer cases. Failing this, there is an undoubted danger that the work undertaken by the institute may become too academic, too remote from practical needs. As I laid down in my opening sentence, it must ever be kept in mind that the primary object of cancer research is, not the discovery of the cause, but of the prevention and cure of cancer. The hospital, as an integral part of the institute, serves ever to keep this in mind, besides affording material for exact observation. If we have decided against the advisability of limiting the work of the institute to experimental therapeutics, this is far from suggesting that therapeutics, experimental and otherwise, are to be excluded from its activities. On the contrary, this should form an important section of the work. There should, for example, be ample opportunities to employ and observe the action of radium and x rays. But here, as I believe is the case at the Memorial Hospital in this city, it must be laid down that if the hospital on its part affords beds for the treatment of patients, with the conscientious endeavor to ameliorate, if not to cure, their condition, so, in return, provided these endeavors are unsuccessful, the patient and his family must freely consent to a full post mortem examination. This, I may add, should obtain in all hospitals with free, or partly free beds.

But now beyond these two central sections of the institute there is, I hold, no need to duplicate special laboratories in physics, chemistry, physiology, pathology, cytology, and general biology, pharmacology, and experimental therapeutics; where these are already present in the city it appears to me both economical and most practical to utilize them to the fullest. Make the heads of such laboratories members of the executive of the institute, and by the development of the same spirit of cooperation, to which I have already referred, let the director of the institute freely consult with the members of that executive; let them together determine what promise to be profitable lines of investigation in each particular branch of science; let these other laboratories be thrown open to those willing and anxious to conduct investigations along any particular line under the direction of the heads of each laboratory, the maintenance of the investigators, and the cost of the investigation being paid by the institute; let the work so done be brought together and focused at the periodical conferences that I have described—and I may add, let the completed articles by all coadjutors be published in the annual report, or, it might be, in the transactions or journal of the institute.

It is, I would emphasize, by cooperation, by such combined efforts, that the most can be accomplished. All this depends upon the spirit in which the work is entered into, and above all things upon the spirit and enthusiasm of the director. But it can be accomplished, and this with promise of untold benefit to our kind.

INFLUENZAL OTITIS.*

By S. MacCuen Smith, M. D.,
Philadelphia,
Professor of Otology, Jefferson Medical College.

The subject of aural disease complicating influenza, more especially the various manifestations, or rather, the lack of manifestations during an influenzal attack, seems to be of sufficient importance to warrant a few observations on this very common disease.

Were it not for the small calibre of the Eustachian tube and the direction of the movements of the ciliated epithelium lining the same, we would have a very much larger percentage of ear diseases complicating the various abnormalities of the nasopharynx. This functional activity of the tubal epithelium, the direction of which is from the tympanic cavity to the nasopharynx, can be likened somewhat to that of the downward peristaltic action of the bowels. The fact that the tube is relatively much larger in infancy and early childhood, however, accounts for the ease with which the various microorganisms can overcome the resistance of the expulsive action of the ciliated epithelium during violent coughing, vomiting, sneezing, and blowing the nose, and the consequent greater prevalence of aural suppurations in early life. Then, again, in debilitating diseases, such as tuberculosis, pneumonia, typhoid fever, and certain types of influenza, the calibre of the tube is considerably increased by shrinkage or atrophy of its mucosa. This no doubt accounts for the fact that the majority of aural

*Read at the Forty-sixth Annual Meeting of the American Otological Society, held in Washington, D. C., May 6 and 7, 1913.

suppurations occur during the latter part of, or convalescence from, various diseases, the bacteria the more readily entering the tympanic cavity because of the impaired resistance of the tubal epithelium. Furthermore, bacteria enter the tympanic or mastoid cavity through the bloodvessels and lymph channels. This would seem to be the logical explanation for the development of so called primary tympanic and mastoid inflammation, more especially the latter. Indeed, we have no other means of explaining such conditions complicating general infections, particularly in the absence of any trace of nasopharyngeal disease.

Although the statement may be justified that it is virtually impossible to get a pure monobacterial culture from an acute suppurative otitis media at the time of incision of the membrana tympani, nevertheless, from a clinical viewpoint, the results of such a microscopical examination can be accepted as definitely defining the character of bacterial invasion. If, therefore, under such circumstances we find the influenza bacillus, I am inclined to accept the infection as being of this particular type, though the patient may not present marked general symptoms of influenza. In a goodly number of cases, more especially encountered during this past winter, we have found extensive aural complications in influenza, although the patients were not sufficiently ill to be confined to their beds. Then, again, in another type of the disease, our patients have been systemically seriously ill, whereas the aural symptoms have been decidedly mild in character.

I am well aware of the tendency of the medical profession, in the present day, to call almost any ailment influenza, in cases where no other disease definitely manifests itself, and this unscientific designation of an illness is analogous to a former period when all doubtful diseases were supposed to be malaria; yet I feel, as stated above, that a culture taken directly from the tympanic cavity does enable us to state definitely whether the otitic involvement is influenzal or otherwise, keeping in mind, of course, that the discharge becomes mixed, or polybacterial, in character very shortly after exposure to the air. We must give due consideration to, and recognize the formidable importance of the influenza bacillus, when this particular microorganism invades the human economy. For example, I quote the published findings of Lord, who, "in a series of 186 specimens of sputum from patients, unselected except to exclude those with tubercle bacilli, found organisms resembling influenza bacilli in fifty-nine per cent. and in almost pure culture in twenty-five per cent. In eight patients their constant presence in the sputum was demonstrated for two and one half years, and the suspicion is strong that they had been present for a much longer time." This observation was made during an interepidemic period, and illustrates the endurance and vitality of the influenza bacilli and their consequent power for almost indefinite destruction. Furthermore, the results of this scientific investigation furnish in detail a conspicuous example of the insidious nature of this organism, in some instances, in striking contrast to its virulence in others.

The aural destruction in some of my influenzal cases has been so rapid that we would naturally suspect that the streptococcus must have been an important factor. However, we were unable to find any microorganism other than that of the influenza bacillus in at least three cases, in each of which the bony destruction was very marked, causing exposure of the sinus and dura all in the space of about twenty-four hours; and this without any suffering from pain or other general manifestations on the part of the patient. In one of these cases a large sequestrum, involving the greater part of the tip, was removed, this patient giving the early symptoms of Bezold's mastoiditis during the preparation for the operation.

I may be permitted to digress for a moment from the subject of influenzal infection in order to state that, in my experience, pneumococcic otitis is very similar to the influenzal form in showing the extreme degree of destruction peculiar to the latter, as well as the tendency toward metastasis.

While the usual case of influenzal invasion is characterized by severe pain, decided rise in temperature, depression, and exhaustion, I wish to emphasize that type of case mentioned above, in which the destruction occurs very rapidly and the complications develop almost simultaneously, without the symptoms enumerated. This leads us again to lay stress upon the importance of the well recognized procedure of early incision of the membrane for the evacuation of tympanic secretion, as well as immediate major surgical intervention if this more simple measure does not give prompt relief.

So long as influenzal invasion attacks the young or those with a thin and more or less porous cortex, the direction of the inflammatory process is usually external, as is commonly manifested by the characteristic pain and swelling over the mastoid. In those cases, however, where the mastoid is small and the cortex comparatively thick and dense, the course of erosion will naturally follow the path of least resistance and invade the sinus or interior of the skull. As it is clearly impossible for us to definitely determine this point in many of these rapidly developing infectious diseases, the safety of our patient, I wish to repeat, lies in early operative intervention.

The first case that I wish to report is that of H. C., male, seven years of age. The parents assert that, prior to the present attack, this child never suffered from any form of ear disease whatsoever. Three days before his admission to the hospital the boy complained of a slight pain in the right ear, not sufficient, however, to interfere with his rest that night. The following day the pain recurred and the attending physician ordered a hot water bag applied to the ear. The patient also slept well this second night. On the afternoon of the following day, through a spontaneous rupture of the drumhead, a slight discharge appeared. Coincident with this, or forty-eight hours after the initial pain, the parents noticed a swelling over the mastoid process, extending below the tip into the neck. The next day, or three days after the onset of the disease, the boy was brought to the Jefferson Hospital and operated upon at noon. On examination we found the external auditory canal well filled with a creamy yellow pus, without odor. There was considerable edema and swelling throughout the entire osseous canal. The opening in the drumhead occupied the greater part of the posterior half. On operation, we found the edema over the mastoid process to be about three fourths of an inch thick. There were two small carious openings through the cortex, which bled freely as the periosteum was separated.

The entire cortex was thin, and upon its removal we found the sinus very far forward, superficial, and exposed through carious erosion in the superior half. The removal of some additional bone over the sinus provided for the escape of a considerable quantity of pus, and we therefore uncovered the vessel from the knee to the bulb. The sinus was bathed in such a large quantity of free pus (which escaped on the removal of the remaining bone covering the same) that we suspected a possible thrombus, which might have become disintegrated, the pus escaping from the bulb. As we approached the neck, however, we discovered that the pus had burrowed through the tip and we were evacuating the same from a Bezold's variety of mastoiditis. We therefore concluded not to interfere with the sinus for at least twenty-four hours, or a sufficient length of time to enable us to determine whether the child was actually suffering from a sinus thrombosis, inasmuch as there was no evidence, by palpation or systemic manifestations, that a clot had formed within the vessel. The antrum was also well filled with a quantity of pus and some granulation tissue. The patient made a slow but uninterrupted recovery, returning home at the end of the fourth week following operation.

This case well illustrates the rapid destruction that frequently accompanies an influenzal otitic inflammation, and also *forcibly* illustrates the almost total absence of suffering by the patient. It may be well, also, in this connection, to call attention to the fact that even though an early myringotomy had been done, in this particular instance it is doubtful whether the rapid destruction could have been prevented or even modified, for it would seem, in accordance with the findings, as stated above, that the mastoid process must have been involved simultaneously with the tympanic cavity.

Not long since I operated on a patient showing no general symptoms, but presenting equally destructive changes, in which the middle ear gave no evidence of inflammation other than a mild degree of myringitis. In this latter case we probably would be justified in claiming a primary mastoiditis, and yet, as stated on former occasions, I believe that the infection originated in the tympanic cavity and that the mastoid was secondarily involved, the former, on account of the patulous Eustachian tube, being able to drain and recover itself.

The second case is that of H. J. K., male, aged fifty-four years, apparently in robust health. Three days prior to admittance to the Jefferson Hospital this patient suffered from an attack of influenza, more especially involving the bronchi, at the end of which time he complained of pain in the right ear. The membrana tympani was decidedly red, though not bulging, but on the following day was markedly bulging and the serosanguineous fluid was evacuated by a prompt incision. The aural pain was relieved for about thirty-six hours, the ear in the meantime discharging freely. At the end of this period the patient complained of discomfort in the occipital region, as well as a return of the aural pain; all of which continued during the succeeding six or seven days. In the interval he also complained of pain over the mastoid process, which was increased on pressure. During the following twenty-four hours the ear discharged profusely, and the pain in the back of the head and over the mastoid process also markedly increased, although the patient's temperature and pulse remained practically normal. On this day, or eight days from the time of his initial pain, there was, in addition to the profuse aural discharge, a marked drooping of the superior and posterior wall. In addition, he became more or less erratic and irritable, the tenderness over the mastoid process was more pronounced, and we performed a simple mastoid operation. When the soft parts were divided the cortex bled freely, and there was found a small carious erosion through which free pus escaped, apparently under pressure. On removing the cortex, we found the cavity to be well filled with pus and granulation tissue. There was a perisinus abscess formation exposing the greater part of the vessel, and also carious erosion exposing the dura, through the tegmen antri. Although the patient's temperature and pulse remained virtually normal, his mental state and general head discomfort continued to grow progressively worse. Three days after the mastoid operation the temperature suddenly jumped to 102.3° F. and the pulse to 112, and the polymorphonuclear percentage, which was eighty-nine, with a leucocytosis of 19,800, suddenly rose to ninety-four, with a leucocytosis of 20,200. Accordingly, we promptly opened the wound, incised the exposed dura, and evacuated a temporosphenoidal abscess formation. This immediately relieved the breathing, which had been very labored, the patient requiring an additional amount of ether for the completion of the operation. During the first part of the following day his general improvement, including the mental state, was very marked, though he died at the end of about twenty-one hours, from acute pulmonary edema. As usual, we were unable to secure an autopsy, and therefore I regret my inability to report on the exact pathological findings.

Five years previously, this same patient had suffered from a suppurative influenzal otitis of the opposite ear, which progressed so rapidly and caused so much necrotic erosion that it was necessary to do a radical operation within the short space of about one week. This case well illustrates not only the rapid osseous destruction of an influenzal otitis, but also shows the rapidity with which a brain abscess formation can develop under the destructive influence of this particular type of infection.

MENSURATION AND PROJECTION OF THE POSTERIOR URETHRA AND VESICAL FLOOR.

*By Means of Posterior Urethral Calipers and Radiography.**

A Preliminary Study and Report.

By Victor C. Pedersen, M. D.,

and

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This contribution was suggested by the following circumstance. A case of suspected prostatic calculi was submitted to radiography by an expert with negative results, and with the statement that in the absence of a cystoscopy the radiograph would not locate the stones definitely as within the prostate or as within the bladder low down, because there was no known guide to distinguish the prostatic urethra and prostate as one zone from the fundus of the bladder as another zone in the photograph. It was hoped that the solution of this problem would be easy to accomplish in the three months previous to

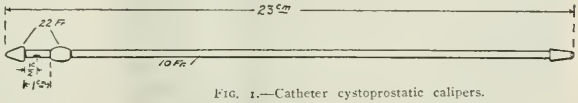

Fig. 1.—Catheter cystoprostatic calipers.

*Read before the American Urological Association at the Annual Meeting, held in Boston, Mass., April 15, 16, and 17, 1913.

FIG. 2.—Radiograph of two silent stones with moderately enlarged prostate.

the meeting, when it was begun. But a number of unexpected peculiarities in the bladder fundus, neck, and posterior urethra became virtual obstacles to interpretation and conclusion of the findings in the radiographs. The number of illustrations in this contribution is therefore about half the number made, as the remainder were held out for study later and publication as part of the final report at the next annual meeting of the association.

The first element of doubt concerns the exact position of the outlet of the bladder. For this a new instrument of the catheter type has been devised and will be used in the final study, so that the bladder may be filled to moderate distention and then withdrawn until the flow ceases; thereby occupying the exact outlet with the conical head and avoiding the uncertainties incident to the solid or noncatheterizing instruments as explained later in this report. Figure 1 below shows this instrument, having a head 1 cm. long mounted on a 10 F. flexible copper catheter, whose vesical outlet is 0.5 cm. back from the base of the head at the midpoint of a space 1 cm. long, which is followed by a smaller oliveform head, also 1 cm. long. Thus when the conical head is in the bladder cavity at the neck, the outlet of the catheter will be closed by the sphincter muscle and the oliveform head will be a short distance, viz., about 1 cm., distal to the sphincter.

FIG. 3.—Radiograph representing two stones in the bladder and one in the right ureter.

The second point of uncertainty rests on variations in the geometrical form of the bladder shadow, and its relation with the upper margin of the symphysis pubis. Certain bladders give a spheroid or an ovoid form, while others add to either a projection downward, and thus prevent a pyriform appearance. Without the slightest effort to interfere with or anticipate the study of others, it is to be noted that Barringer and McKee are working up this particular detail. Suggested explanations are the following: Overdistention may in certain bladders cause a slight relaxation of the fundus and internal sphincter, with moderate prolapse into this downward projection. In order to avoid this circumstance the amount of fluid injected into the bladders

FIG. 4—Radiograph showing a vesical calculus.

FIG. 5.—Radiograph showing a vesical calculus situated fairly high in the bladder.

was never more than 250 c. c., and in one or two of the pathological bladders was necessarily less, as hereinafter noted. Anatomical formation may well be a final explanation of the peculiarity, but for decision would require a very large number of observations. It must therefore be dismissed here with mere mention. The position of the x ray tube may well alter the form of the shadow of the bladder and its relation with the upper margin of the pubic symphysis. This was as far as possible avoided in our study by having the cone of the tube carrier at right angles to the table and its edge tangent either to the base of the penis in males, and clitoris in females, or to the upper limit of the symphysis as indicated by palpation. The latter was much the more common and seemingly appropriate position. Nevertheless, the aforesaid variations of the form and position of the bladder occurred. The

FIG. 6.—Radiograph showing a vesical calculus.

separation between the bladder shadow and the symphysis may be due to the opening up of the prevesical space through the weight of the distending fluid in the recumbent position. In a recent operation for prostatectomy, with distention of the bladder with urine above the umbilicus, the writer found the prevesical space stretched open so as to form almost a real rather than a potential cavity. This condition at once occurred to him as important in dealing with x ray work on the bladder. As already pointed out, the position of the sphincter is one essential point, as in the male it carries with it the position of the upper surface or base of the prostate, and the location of the apex of the prostate is the second important point for determination, for the reasons that the gland surrounds the posterior urethra, and that calculi and other conditions somewhat discernible by the x ray are in the gland and

FIG. 7.—Radiograph of same patient as that of FIG 2, showing bladder filled with twenty-five per cent. argyrol.

its portion of the urethra with nearly equal frequency.

The original posterior urethral calipers were discarded, but may be briefly described as having consisted in a 22 F. conical head, a flat flexible copper shaft with centimetre marks on the distal end, and a sleeve sliding easily over this shaft and bearing an olivehead 22 F. The instrument was not flexible enough, and the variations in position of the olive-pointed vesical portion made it impossible to seat the sleeve or urethral portion against the apex of the prostate with sufficient gentleness.

Historically it may be interesting to make note of preceding prostatic and urethral calipers, of which

there seem to have been but three, none embodying the same principle as this. One was devised by G. Walker (*American Journal of Urology*, 1907, v. III, page 377). One part of the instrument traversed the other, but this, of course, is a universal principle of exploring and other instruments. The x ray does not figure in Walker's work. The device is described as a new instrument to measure the thickness of the prostate. Mansell-Moullin described a prostatometer in 1892 (*British Medical Journal*, 1892, p. 1344, second half). The principle embodied was that of a urethrometer. Cathelin, in 1908, described a prostatic "mensurateur" which sought to measure the thickness of the prostate from within the bladder. The principle was that of the old lithotrite. As a matter of fact, it was soon modified so as to fulfill both these purposes.

No previous instrument appears to have been presented embodying that of the new one which will be applied to the balance of this study, viz., of a catheter, permitting the bladder to be filled and the exact position of its outlet shown by withdrawal of the instrument. This idea resulted from an endeavor to make a woven silk catheter impregnated with lead, so as to be impervious to the x ray. This permitted the foregoing manipulation as to the bladder and its neck. The position of the apex of the prostate was located by passing a small flexible bougie-à-boule alongside the catheter; not always with full success, however, as the head was so small, and frequently not between the finger and the catheter, that it escaped detection in the bulb of the urethra and was therefore advanced too far. The most successful of our studies was made with an ordinary bougie-à-boule, 24 F., curved to agree with the standard sound inserted into the bladder and withdrawn until its head seemed to lock on the sphincter. Over its shaft was passed a blunt uterine curette with its point bent at right angles to its shaft, which was likewise slightly curved on the same radius. This large loop was easily advanced along the urethra and readily and unmistakably felt in the bulb at the apex of the prostate. The transverse diameter of the true pelvis passes approximately through the spines of the ischia at their bases; this for the purposes of radiography of the pelvis is sufficiently accurate. This imaginary line is slightly posterior to the position of the ureters, which is also an advantage, inasmuch as many lesions of the bladder begin on the floor near the ureters, and that present in deformation of the bladder floor by tumors and enlargements of the prostate occurs above the ureters first and foremost. There is normally a slight pouching of the bladder beyond this line, so that one would therefore expect the shadow of the stones in the bladder to be in this line, if the bladder is reasonably normal; above it, if there is much pouching, and below, if the bladder floor has been altered by operation. It is hoped that our final study will tend to settle these points and that this preliminary study is at least suggestive in showing the probable facts.

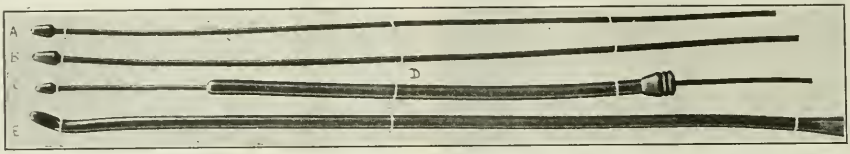

FIG. 8.—Instruments rendered impervious to x rays by impregnating their surfaces with lead.

Fig. 2 is a radiograph of two silent stones with moderately enlarged prostate. The patient had had but one attack of very insignificant hematuria. The diagnosis was made with the cystoscope, which showed the stone just beyond the prostate in the usual depression. It will be noted that the stones lie in or slightly above the transverse diameter of the true pelvis, fairly well represented by an imaginary line connecting the two spines of the ischium. This particular photograph was taken by Dr. Byron C. Darling.

Fig. 3 represents two stones in the bladder and one in the right ureter.[1] The patient had undergone perineal prostatectomy about a year previous to the discovery of these stones and a double seminal vesiculotomy about three months before. It will be noted that the two vesical calculi are very low, but that their shadows do not merge with the shadow of the symphysis. No doubt the absence of the prostate gland accounts for this, at least in some degree. The shadow of the ureteral calculus is elongated to almost double the size of the stone, owing to the natural obliquity of its position in the ureter. Nevertheless, the imaginary line connecting the two spines of the ischia passes through the shadow, and therefore in a certain degree indicates

FIG. 9.—Radiograph of a normal bladder in a young man almost fully recovered from gonorrhea.

[1]This case was reported in full in the *Medical Record*, December 28, 1912, Adenomatous Hyperplasia of the Prostate Gland, etc.

FIG. 10.—Radiograph of a postoperative case of traumatic stricture of urethra, cystitis, and moderate involvement of prostate.

the position of the ureters and centre of the floor of the bladder in the x ray picture.

The succeeding three figures, Nos. 4, 5, and 6, are all vesical calculi, situated fairly high in the bladder, so that the transverse diameter previously described, either cuts the stone, as in Figs. 4 and 6, or is tangent to the lower border, as in Fig. 5. The exact histories of these cases are lacking, so that one can hardly explain the variation of the position of the stones in Figs. 5 and 6.

Fig. 7 is the same patient as that of Fig. 2, but it shows the bladder filled with twenty-five per cent. argyrol, through a soft rubber catheter, up to 250 c. c. and the catheter slowly withdrawn, while a flow of the argyrol was continued so as to fill and distend the urethra behind a rubber band closing it at the sulcus of the glans. It will be noted that the bladder shadow fills the true pelvis as a whole, but nevertheless leaves a space almost one cm. wide

FIG. 11.—Radiograph of another stricture case.

between itself and the symphysis pubis. It will also be observed that no argyrol whatever remained in the posterior urethra, but that the shadow of this passage begins only at the bulb. These conditions showed that it would not be possible to demonstrate the position of the deep urethra in this way. It was therefore determined to adopt the expedient of impregnating the surface of ordinary woven bougie-à-boule, straight bougies, and catheters with lead, thus rendering them impervious to the x ray. A small number of these instruments was prepared in order to establish their fitness. The set is shown in Fig. 8.

The three bougies-à-boule are shown in *A*, *B*, and *C* of the figure, while *D* represents the straight bougie with its end drilled to pass over the shaft of the former three instruments. It lies in this relation with bougie-à-boule *C*. The purpose of this arrangement was to pass the ball sound into the bladder and seat its head at the neck, and then to pass the straight bougie along the shaft to the apex

FIG. 12.—Radiograph of a case of chronic urethritis and moderate stricture.

of the prostate. The impregnation of these instruments with lead was not particularly successful, which militated against entire satisfaction with the various plates. It happens that the majority of them are in the series withheld for the final study during the coming year.

Fig 9 is a normal bladder in a young man, almost fully recovered from acute gonorrhea. The distending fluid is twenty-five per cent. argyrol up to 250 c. c. total, through the lead covered coudé catheter shown in Fig. 8. This was then withdrawn until outflow ceased, and the photograph taken. It will be seen that the shadow of the bladder fills a large portion of the true pelvis; that there is no separation of complete type of it and the symphysis; that there is prolongation downward of the neck, producing the pyriform shadow, and that this cannot be distinguished from the tip of the catheter. There was no attempt made to designate the tip of the prostate in this observation.

FIG. 13.—Radiograph of a woman, showing the ovoid form of bladder.

Fig. 10 is a postoperative case of traumatic stricture of the urethra, cystitis, and moderate involvement of the prostate. About 150 c. c. of argyrol twenty-five per cent. solution were run into the bladder, whose capacity was diminished to this degree. The lead covered coudé catheter was used again in the same manner as in the preceding case. One easily perceives that the shadow rests high in the true pelvis, fully one centimetre away from the symphysis, and that there is a very slight tendency to the pyriform type. In the region of the bulb a dense shadow is seen, concerning which there is uncertainty. No instrument was passed along the side of the catheter, or, in fact, could be if desired, inasmuch as the urethra of this patient is very small. The shadow may be the stricture mass, which was very dense and nodular.

Fig. 11 illustrates another case of stricture, the patient having been subjected to numerous operations, but none at the hands of a urologist. The photograph shows the same conditions as those illustrated in Fig. 10 except that the bladder is more contracted and the seat of chronic suppurative cystitis. For this reason distention could not be carried beyond 150 c. c.

The failure of the lead covered catheter to give definite results especially when argyrol is the distending medium led us to change to air. There seems, however, to be a certain amount of danger connected with this, as brought out by Marks in connection with his air dilating urethroscope. We shall, therefore, now discontinue to use air.

Fig. 12 shows a case of chronic urethritis and moderate stricture; 250 c. c. of air were run into the bladder, and the resulting picture shows these details. There is a bladder shadow which extends below the line of that of the symphysis, but in the spheroid type and not the pyriform. It likewise crosses the head of the metal bougie-à-boule seated in the neck. The loop shadow at the bottom of the picture is the curette bent on itself and passed over the shaft of the bougie-à-boule to the apex of the prostate. Here again the position of the instruments is suggestive of the proper location and dimension of the prostatic urethra, and rather proves that this combination is the best for establishing the place of this anatomical part in a radiograph.

Fig. 13 is that of a woman and has the advantage of permitting one to be very sure of the position of the two instruments in the urethra, which in the human female corresponds with the membranous and prostatic portion of the male. Air was again used, 250 c. c. and the bougie-à-boule was passed into the bladder and gently withdrawn, and its position examined with the finger in the vagina. The curette was then passed to the meatus and vestibule, examined there with the finger, and the photograph taken. The latter shows the following curious facts: The ovoid instead of spheroid form of bladder of the female, as compared with that of the male. It is separated a considerable distance from the tip of the bougie-à-boule. Although not at all pyriform, it passes almost 1.5 cm. below the shadow of the symphysis. The two instruments, although they show about the same length of the urethra as in the male, are also fully 1 cm. or more lower down, so that the head of the ball sound is at the pubic arch, instead of at or just below the upper border of the symphysis.

Fig. 14 shows a postoperative prostatectomy. The bladder was distended with 250 c. c. of air and a metal bougie-à-boule was passed into it and seated at the neck as carefully as possible. Then with the finger in the rectum the smallest lead covered bougie-à-boule was passed down to the apex of the prostate. A number of peculiar features are worthy of comment. The shadow of the bladder is well above the line of the symphysis, although its floor is gone or greatly altered through the removal of the prostate. One would expect a very decided pyriform shadow here, but sees only that the shadow passes down to the apex of the ball sound in an interesting but rather inexplicable way. The lead covered bougie-à-boule is distinct enough, and the

FIG. 14.—Radiograph of a postoperative prostatectomy.

distance between it and the metal instrument is a fair representation of the normal length of the prostatic urethra and its position.

We feel that there is a real value in this study and that when possible the combination of a curette and a metal bougie-à-boule on a catheter shaft will set at rest the various points of doubt frankly confessed in the opening paragraphs of this contribution. The work will be continued through this year, and if possible enlarged so that at the next annual meeting final results will be in hand.

45 West Ninth Street.

THE PHILOSOPHICAL ANATOMY OF THE LUNGS.

By Edmond Souchon, M. D.,
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We must first note that the lungs are considered by some as the most important or vital of all the organs of the body. The great Bichat, in his immortal *Recherches sur la Vie et la Mort*, states that the lungs, the heart, and the brain are the *tripod of life*, with a leaning toward the greater importance of the lungs. Those who have visited the Orfila Museum of Anatomy in Paris must have been impressed by the grand lifesize statue of Bichat at the foot of the stairs leading to the museum. It symbolizes the *Recherches sur la Vie et la Mort*. It represents Bichat bending slightly over a youth that is standing. His lofty brow and fine features are set as if listening to the whisperings of his inspiring genius, ready to write them down with the pencil he holds in his right hand. There is a shade of the irony of fate in the fact that the sublime extoller of the lungs was afflicted with tuberculosis of the lungs. He died at the age of thirty-three, leaving the scientific world filled with his glorious name. It is equally worthy of notice that the illustrious Laënnec, who carried the auscultation of the lungs to such a marvelous perfection, died of tuberculosis, contracted, it is said, in the autopsy room.

We must remember that the lungs are the only organs that contain air. It is noteworthy that they are never entirely empty of air, nor is the heart of blood. It is notable that the lungs are the most frequently diseased of all the organs. The dictionary says that *lung* means *light*, not heavy. I am told that butchers and the common people call the lungs the *lights*. We should remember that the lungs belong to the group of organs that have lobes like the brain, thyroid, thymus, liver. We should also take notice that they belong to the class of double organs, like the salivary glands, suprarenal capsules, kidneys, ureters, seminal vesicles, testicles, Cowper's glands, ovaries, Fallopian tubes. It is a fact to be noted that they are asymmetrical organs, the only double organs to present this peculiarity.

We should remark that the two lungs almost fill the whole chest, i. e., occupying one good third of the trunk cavity. The two occupy more space in the body than any other organ or organs. We should lay some stress upon the difference in size of the two lungs. The right is somewhat larger than the left, although it is shorter, owing to the encroachment of the liver into the right chest; yet the left lung is narrower because of the encroachment of the heart upon it. It is worthy of notice that the axes of the lungs are directed vertically, like the suprarenal capsules and the kidneys. It is to be noted that the lungs are free all over their surface except at the very small point of the hilum. The spleen and the kidneys are the only other organs presenting this feature. A special note should be made of the mobility of the lungs. They expand and contract rhythmically. The heart is the only other organ presenting the peculiarity of expansion. A notable point is that the lungs impart passive motion to the chest walls, but they receive no extrinsic movement. It should be remarked that they follow the chest walls during respiration, and are constantly in contact with them. It is worthy of more than passing notice that from the first breath of life at birth to the last parting gasp, the lungs never rest. Neither does the heart. Both are the only two organs that never sleep.

We must call attention to the shape of the lungs. They are irregularly conical, the irregularity consisting in the concavity of their inner surface to accommodate the heart and in the excavation of their base to fit the convexity of the diaphragm. It is remarkable how extensive is the external or convex surface of each lung. This is unique, the liver being the next organ presenting an extensive surface. Another characteristic feature is also presented by that surface in the interlobar fissures. This is for the purpose of facilitating the expansion movements of the lungs. We must observe that the left lung has only two fissures, whereas the right has three. The reason for this is that the right lung is more compact, is broader than the left, which is longer and more slender. These fissures are found in no other organ. The brain presents the Sylvian fissure, but there is no motion between the surfaces of the fissure and the arachnoid bridges over it, whereas in the case of the interlobar fissures the pleura dips in between the lobes so as to facilitate the gliding movement between the lobes.

We must note especially the peculiar gray color of the surface of the lungs in the adult, together with the black pigment strewn all over it. Their color and pigment are unique, being seen in no other organ. We will also call attention to the faint lines marking the base of the superficial lobules, lines so much better marked in the fetus and child. The surgeon is interested in remembering that the whole of that surface is accessible through the intercostal spaces.

It is to be particularly mentioned that the internal surface of the lungs is much more complex than the outer one. First, we should note that it is much more limited; next, that it is concave. Then the hilum is the most typical of all the hilums. It is peculiar that it is the only point where the lungs are bound, being free all over. It is a feature that that part of the lung in front of the hilum corresponds to the pericardium and heart, and that part which is behind it to the posterior mediastinum; finally, that the part above it limits the superior

mediastinum. Special attention should be called to the under surface of the lung, commonly called its base. It is the only organ presenting such an excavated or concave surface. The base of the suprarenal capsules is also concave, but it is very insignificant compared to this one. The concavity is to accommodate the convexity of the diaphragm. It is to be borne in mind that it is more marked in the right lung, because of the greater bulging of the liver into the chest. A point of interest is that very relation of the liver with the lung, explaining how abscesses of the liver may discharge into the lungs and bronchi. We must insist particularly on the bulging of the apex of the lung into the supraclavicular region, beyond the border of the first rib, which makes an indentation in it. This presence of the lung in the space mentioned above, is a fact that surgeons must not forget in operating there. There is no organ, except the liver, that presents such a broad and extensive posterior border. It is truly a surface. Together with the external surface it presents a remarkably extensive area for stethoscopic examination.

There is quite a contrast between the anterior and the posterior borders. The former is short, thin, slightly sinuous, and festooned; recalling somewhat the anterior border of the liver. There is no parallel anywhere to the inferior border, the one which circumscribes the base. We must lay stress on its thinness and sharpness, which fits it to come down into the inferior or diaphragmatic cul-de-sac, during inspiration, especially a deep one. The descent and ascent of that sharp edge during respiration explains how there may be a penetrating wound of the chest and pleura without penetration of the lung if the injury is inflicted there during expiration, when the lung has receded from the cul-de-sac.

The color of the lungs is *sui generis;* its pigmented appearance is without an equal anywhere. It is worth noticing that the pigment does not exist in infancy and that it comes on and extends as the subjects advance in life. It is interesting to remember that it is said to be due to particles of dust and coal absorbed from the atmosphere and incorporated into the lung tissue.

Again, the consistency of the lungs is unlike that of any other organ. Its soft and downy sensation is unique and characteristic. It is due to the presence of air in the vesicles. Another unique and characteristic trait is that upon pressing the lung tissue between the fingers there will be felt a sensation of fine crepitation. It is said to be due to the passage of fine bubbles through the liquid contained in the vesicles, or the rupture of the walls of the vesicles by the air under the pressure. It is extraordinary how small is the density of the lungs. It excels all the other organs in that respect. It will float almost entirely when put in water, whereas all the other organs will sink below the surface when thrown into a bucket of water. Of course, that is due to the air in the vesicles which cannot be entirely expelled in spite of all efforts, whereas the gas in the stomach and intestines can be removed entirely, and the organs made to sink. We should lay some emphasis on the little friability of the lungs. The thumb nail penetrates them with difficulty; they are the toughest of all organs; they do not tear easily. All this is due to the character and nature of the tissues entering into their composition. That toughness, which cooking will not overcome, is the reason the lungs are not used for human food. They are the only solid organs that are not eaten by man. However, they are fed to cats, very likely because they are cheap, not being eaten by human beings, and may be cats eat them because they can get no other food. We must take special notice of the elasticity of the lungs. It is without an equal. No other structure will stretch like them. It is also wonderful how retractile they are, coming down immediately after having been inflated. That is due to the large amount of elastic tissue entering into their composition. That retractility was also necessary for the proper function of the lungs.

A notable exception from the structure of other internal organs is the absence of a regular, distinct, fibrous envelope under the endothelial layer. We find there no membrane, ever so thin, that can be peeled off like the one enveloping the kidney and the liver. This may be due to the excessive amount of fibrous tissue entering into the structure of the lungs; it is densely packed and flattened on the surface, and renders a separate envelope unnecessary. We must admire the simplicity of the formation of the pulmonary lobules by the dilatation of the terminal inner surface of the hollow lobules of the depressions or alveoles called the air vesicles, to increase the surface of action. The whole recalls the lobule of the racemose glands, the air vesicles representing the acini and lobule, and the capillary bronchi the initial excretory duct. It deserves noting that a whole frog's lung represents a whole lobule of a human lung. The greatest characteristic of the structure of the lungs is the immense amount of fibrous and elastic tissue that enters into their formation. There is so little of all the other highly organized tissues that they may be ignored. However, we cannot let pass the smooth, muscular fibres found in the capillary bronchi, where they seem to play the same rôle they do in the vascular capillaries. Two facts worthy of more than passing notice are the presence of a ciliated epithelium in the bronchi, and the fact that the epithelial cells, constituting the lining of the air vesicles, are deprived of nuclei. For this reason they are by some called epithelial plates. The absence of the nucleus is to leave as little as possible of substance between the air in the vesicles and the blood in the capillaries.

The circulation of the lungs is most interesting in that it presents two separate circuits or circulations, the pulmonary and the bronchial. The liver presents a dual arterial circulation, represented by the hepatic artery and the arterial or intrahepatic portion of the portal system, but there is only one set of veins, the hepatic veins; whereas in the lungs we have a pulmonary artery with the pulmonary veins and the bronchial arteries with their satellite veins. We should be impressed by the large size of the pulmonary artery, larger in its initial portion than the aorta itself, as it has more blood to transmit at any one time than the aorta has at any one time. Its origin from the heart is without ex-

ample; it comes from the infundibulum of the right ventricle and seems truly a prolongation of it, quite different from the abrupt origin of the aorta from the left ventricle. Let us note that the presence of this infundibulum or funnel of the right ventricle is to facilitate the flow of the blood into the artery, thus requiring less force from the ventricle. This because the right ventricle has weaker walls and driving power than the left, and has to drive a larger amount of blood at a given time than the left ventricle. We must make special mention of the presence of the semilunar valves at the orifice of the pulmonary artery. These valves have no duplicates anywhere except in the aorta. Why are they pocket shaped? We must remember that the valves of the pulmonary artery are not as thick as the aortic valves, because they have not to resist such a long column of pressure. It is a most striking fact that there are no valves at the orifices of the two cava veins and the four pulmonary veins. This is because the pulmonary artery, the aorta, and the great coronary vein are connected with the base of the ventricles, which are almost entirely fibrous, presenting no muscular, sphincterlike fibres around their orifices, as we find in the case of the two cava veins and the four pulmonary veins. These fibres close these orifices as soon as the auricles start to contract; therefore no valves were needed there.

The course of the pulmonary artery is special and unique in that it is at first anterior to the aorta, then winds around it, and finally is under it. The two vessels twist or interlock like the two bent index fingers placed one under the other, the right over the left. There is no other such vessel winding around another in such manner. It is not to be forgotten that the remnants of the arterial duct of Arantius are almost always found in the adult. We should make the special point that the right branch of the pulmonary artery divides into three divisions, whereas the left divides only into two, because the right lung has three lobes, against the left's two. But it is the terminal capillaries of the pulmonary artery that call for admiration of the wisdom of the Maker. We should remember that they form three capillary plexuses, one around each lobule, a second one in the partition between the air vesicles, and a third one beneath the epithelium. All this for the purpose of breaking the force of the heart's impulse and preventing the rupture of the capillaries, whose walls are reduced to the very minimum of thinness so as to have as little intervening tissue between the blood in the capillaries and the air in the air vesicles.

We must take note that although there is but one pulmonary artery there are four pulmonary veins; but we must see the point that each vein is much smaller and that the four are not as large as the artery, since the blood in passing through the lungs has lost some of its bulk. We must also remark that there are only two right pulmonary veins, whereas the artery has three divisions in the right lung. It is very remarkable that the orifices of the pulmonary veins have no valves to prevent the reflux of the blood when the auricle contracts. The cause for this is that when the auricles contract they contract from the periphery to the centre, and their first action is to close the sphincterlike fibres placed at the orifice of the pulmonary veins. Last, but not least, we must not lose sight of the fact that the pulmonary veins carry a purer blood than the artery because of the depurative action undergone by the blood in passing through the lungs. With regard to the bronchial arteries we must be struck by their very small size as compared to the large organs to which they are distributed. The explanation for this is that they are simply the nutrient arteries of the lungs and that the lungs are composed of tissues which require very little nutrition. Besides, it is most remarkable that the amount of solid tissue in the lung is quite small. When a lung has been compressed against the mediastinum by thoracic effusion continued long enough to expel all the air, the large lung is often reduced to the dimensions of the hand, in thickness, length, and breadth. It is to be noticed that the bronchial artery, being only a nutrient artery, the capillaries of this reaching the lobules and the air vesicles, do not share the provision of nature in the thinning down of their walls and reaching the subepithelial spaces, so that they do not participate in the process of osmosis. We must make a note that the bronchial veins do not discharge into the auricles, but into the innominate veins or one of the afferent branches.

Let us remember that the lymphatic glands, into which the lymphatic vessels of the lungs discharge, are located at the bifurcation of the trachea, so that when they are much enlarged they contribute to the distress of the breathing by compressing the bronchi. It is thoroughly out of the ordinary that these glands should be of a black color, due to the transmission through the lymphatics of the coloring matter found in the lungs. It is quite a remarkable fact that the lungs receive no single special nerve. The nerve supply is abundant, but comes from a plexus, the bronchopulmonary. This arrangement is the same as for all the organs of vegetable life. None receive a large nerve dirctly, but get their supply through plexuses. The liver, receiving the right pneumogastric nerve, is the only exception. We must note especially that the lungs present in their chemical composition less of the highly nitrogenous compounds than any of the other organs, except perhaps the cartilages.

It is to be remembered that during fetal life the lungs are solid organs, and as such they will sink in water. This is a capital sign in medical jurisprudence, because it is positive proof that in case of infanticide the child was killed before it breathed, whereas when the lungs float it is a sure sign that death occurred after the child had breathed. We should make a note that this test is called the pulmonary docimasia. We must recall here that another remarkable feature during fetal life is that through the arterial duct of Arantius, the bulk of the blood from the right ventricle evades the lungs and goes directly into the aorta. The reason of this is that the lungs are passive and inactive in fetal life. Only enough blood is allowed to get through them to keep, as it were, the machinery in working order, ready for the big work that is coming. With the first breath the lungs fill with air, and from that moment they never cease to act until death. We must bear in mind that after birth the arterial duct becomes obliterated because all the blood goes to

the lungs and ceases to pass through the duct. We must lay special stress on the fact that during fetal life and infancy the lungs have a pink color and the outlines of the base of the superficial lobules are well marked, owing to the greater quantity of connective tissue. But after adolescence the lungs begin to become gray, then pigmented, while the outlines of the lobules become less distinct from the absorption of the greater abundance of connective tissue observed in the fetus. All these things increase with age. It is to be noted especially that in men working in the coal mines the lungs often become very black, even presenting coal dust calculi or deposits. It is the anthracosis of miners.

BILATERAL NEPHROLITHIASIS.*

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Operations for vesical calculi were among the earliest successful procedures, and for many years before the aseptic era a number of surgeons became expert in the operation of vesical lithotomy. Operations for calculi of the kidney and ureter, however, are of comparatively recent date. Watson and Cunningham (1) state that the operation of Dr. William Ingalls, performed at the Boston City Hospital, October 8, 1872, was one of the earliest, if not the first; the operation was reported in the *Boston Medical and Surgical Journal* in 1882 (2).

Operations upon the kidney, prior to the use of the cystoscope, ureteral catheterization, urinary separation, and skiagraphy, were undertakings of great risk, from lack of accurate diagnosis and lack of knowledge of the condition of the opposite kidney. We of the present day and generation are wonderfully blessed in the advancement of this science, which, by the cooperative efforts of men devoting their energies to different lines of scientific investigation and diagnostic technic, have placed the surgery of the renal tract upon a scientific basis and reduced the hazards to a minimum.

The frequency of simultaneous occurrence of stones in both kidneys is variously estimated from fifty per cent. (Lagneu) (3), quoted by Hugh H. Young, to a much smaller proportion. The invariable possibility of this condition should, however, be in our minds when planning operation for renal stone. The fact that a stone may cause few or no subjective symptoms for long periods of time must be remembered when diagnosticating unilateral calculi. The importance of skiagraphing both kidneys and the entire renal tract, and of determining the patency of each ureter and the renal function of each kidney is paramount. The skiagraph taken and interpreted by an expert is the most accurate and important factor in the present day diagnosis of urinary calculi. Authorities differ as to the possibility of securing radiographs of certain types of renal calculi, noticeably those composed of uric acid and cystine. In order to determine the comparative density and resulting radiographic shadow, my associate, Dr. Arthur C. Heublein, has made radiographs of a number of renal calculi of various composition, which will later be presented. It will be seen that even the uric acid and cystine calculi furnish definite shadows, and while it is true that these radiographs were made of the stones after they were removed, in a favorable subject with a modern apparatus it is possible in a certain percentage of cases to secure shadows of even the uric acid and cystine deposits.

In this series of calculi we have not depended upon the appearance and physical characteristics of the stones, but have subjected them to chemical analysis. When we consider that primary renal calculi are the result of inherent conditions, rendering both kidneys equally liable, such as hereditary tendency, uric acid or crystalline diathesis, the drinking of water believed to be productive of stones, and faulty catabolism, all of which are general conditions, it is strange and fortunate that bilateral calculi are so comparatively infrequent. In our zeal to apply the latest and most satisfying aids to diagnosis, we may at times be inclined to neglect the older and still valuable methods of rigid physical examination and accurate painstaking microscopical search for urinary sediment, so skilfully taught and practised by our friend, Dr. Louis Heitzmann.

In a communication made to the International Urological Association in Paris in 1908, Dr. F. S. Watson reported twelve cases of bilateral calculus in which both ureters were simultaneously blocked by calculi, and in which both kidneys contained secreting substance which was functionally capable to a useful degree. In three of these cases no operation was performed, and the three patients died; in seven cases a unilateral operation was done, and all the patients died. In two cases a simultaneous operation was done upon both kidneys, and both patients recovered. The dangers of bilateral are more than double those of unilateral calculi. Structural damage and infection may go on simultaneously in both kidneys, finally rendering operation upon either or both far more serious than the operation for unilateral affection. Anuria is, unfortunately, prone to follow these operations, even though the unoperated kidney has fairly good function before operation; and the phenomenon is supposed to be due to a renal reflex which inhibits excretion.

Two problems confront us in bilateral renal calculi; first, shall we operate at all, and, if so, on one or both kidneys, in the absence of moderate or urgent symptoms; second, shall we operate upon both kidneys at one time? The greater number of operations in bilateral calculi have been performed on one kidney, the other kidney being attacked later or not at all, in accordance with the developments following the first operation. Kümmel (4), Watson (1), and some others advocate operating on both kidneys at one time. A frequent contraindication to this procedure is the serious condition at the time of operation; the added time, increased amount of anesthetic, the additional shock and hemorrhage have to be reckoned with. In two of the speaker's cases the primary operations were performed in severe emergency; in one instance the operation upon the second kidney was performed later when the patient was in better con-

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dition. Unlike the cases reported by Kümmel, these patients improved markedly between the first and second operations. In the first case the second operation called for some weeks later by an acute infection occurring in the unoperated kidney, and

FIG. 1.—Case I. One large and a few smaller stones in left kidney; indistinct shadow of stone in right kidney.

in the second case an elective operation was performed for a large stone with infection some weeks following nephrostomy and nephrolithotomy for pyonephrosis and nephrolithiasis.

The speaker begs the privilege of reporting three cases of bilateral renal and ureteral calculi with operations.

CASE I. Bilateral nephrolithiasis; pyelitis; nephrolithotomy. W. W.; male; age twenty-four years; single; English; milk peddler; Westfield, Conn.; referred by Dr. J. F. Calef, Middletown, Conn.

Family History: Irrelevant. No tuberculosis or cancer, and no history of calculi.

Personal History: Patient had never been seriously ill. Habits, good; denied venereal disease. Present illness: Eighteen months ago urinary frequency developed, accompanied by dysuria and occasional hematuria, with pain in the left kidney region. Weight reduced from 151 to 145 pounds. Felt weak and exhausted after his work; was not conscious of having had rise of temperature; had neither cough, hemoptysis, nor night sweats.

Condition at Time of Examination: Medium height, slightly built, nervous and apprehensive. Pulse 90. Temperature 99° F. Pupils reacted to light and accommodation; reflexes normal. Throat, heart, and lungs negative. No palpably enlarged glands. Abdomen negative; no urethral discharge. Rectal examination revealed prostate slightly enlarged; tenderness at vesical neck. The urine was cloudy, acid reaction, contained pus and blood, but no crystals nor tubercle bacilli were found. Skiagraph by Dr. A. C. Heublein revealed one unusually large stone and a few smaller ones, occupying the pelvis of the left kidney; a filbert-sized stone occupying the pelvis of the right kidney. The phenolsulphonephthalein renal function test (Dr. M. N. Hepburn) gave twenty per cent. of elimination. By reason of stricture at the vesical neck, cystoscopy was unsuccessful. Ten days later the patient was found to have a rise in temperature, frequent pulse, and tenderness over the left kidney, whereupon left nephrolithotomy was decided upon.

Operation: The operation was performed at the Hartford Hospital, June 29th, under nitrous oxide-oxygen anesthesia. A left oblique lumbar incision was made, kidney exposed and delivered; found enlarged and fluctuating; large stone was readily palpated in the pelvis. Incision was made over the convex border of the kidney, and a huge oxalate of lime stone weighing thirty-three grammes and measuring 7 x 8 x 5 c. m. was removed from the pelvis of the kidney through the cortical incision. Two stones of marble size, and a number of sandlike stones were removed. Hemorrhage was controlled by hot, moist, gauze packs; drainage of the kidney by rubber tubing carrying gauze. The patient suffered hardly any shock from this operation, and at the end of forty-eight hours was in excellent condition, the kidney draining freely, 700 to 1,000 c. c. of urine being voided per urethram. The patient returned to his home at the end of four weeks after a comfortable convalescence, and at the end of six weeks was apparently well. He was without pain, his temperature was normal, and he returned to his work. On September 8th he was seized with pain in the right renal region (over the unoperated kidney), accompanied by chill and followed by high temperature. The urine became scanty, contained a quantity of pus, and was voided frequently. This condition persisted for four days, when the patient was removed to the Middlesex County Hospital. Examination at this time found the patient with temperature 104.8° F.; pulse, 120. Cheeks flushed, perspiring freely, tongue heavily coated, and marked tenderness over the right kidney, which was enlarged. The urine contained a quantity of pus. Patient was given warm baths, quantities of water, and on the following morning the temperature had receded to 101.5° F. Right nephrostomy under nitrous oxide-oxygen anesthesia was performed. Through a right lumbar incision, the much swollen kidney was exposed, incised over the cortex, and 15 to 20 c. c. of pus liberated from the pelvis. Three stones were extracted; two of marble size, and one the size of a kernel of corn. The kidney was drained with rubber tubing and gauze. Patient bore the operation well with but slight shock, the acute symptoms of the infection at once abating. Patient left the hospital at the end of four weeks, going on to complete recovery; he regained his weight and resumed his work.

CASE II. Bilateral nephrolithiasis; pyelonephritis; nephrostomy. E. S. M.; male; aged forty-five years; white; married; native of United States; manufacturer; Middletown, Conn.; referred by Dr. J. E. Loveland, Middletown, Conn.

Family History: Good.

Personal History: Aside from the usual diseases of childhood, patient was not seriously ill until thirty-five years old, when he had symptoms of renal lithiasis. Two years later he was carefully examined by a distinguished Boston physician. Skiagraphs were taken, and a diagnosis of bilateral nephrolithasis established. No operation advised. May, 1912, patient was brought to us for diagnosis and advice, having suffered pain in the lower right abdominal quadrant. Doctor Loveland suspecting appendicitis. Skiagraph showed large stones in right and small shadows in left kidney. Phenolsulphonephthalein function test gave no urine coming from left ureteral orifice at the end of forty minutes; right kidney secreting fairly well. Doctor Hepburn's diagnosis: Bilateral nephrolithiasis, with left kidney not secreting. Respirations were embarrassed, particularly with patient on left side. There was no cough or expectoration; urinary output continued about the same in amount, always containing large quantities of pus. Patient improved during the early part of September; at the end of a week relapsed; elevated temperature, rapid pulse, and hurried respiration developed, with marked tenderness, pain, and swelling in region of right kidney.

FIG. 2.—Case II. Large stone in right, and three small stones in left kidney.

Condition at Time of Examination (Middlesex County Hospital, September 15): Tall, well nourished, very ill looking man; skin, lemon color, rapid pulse, temperature ranging from 101 to 102° F.; diminished breath sounds in right lower lung; presence of fluid not determined; no pleuritic friction rubs. Heart sounds weak. Distinct tenderness and swelling in right renal region posteriorly, urine becoming more scanty and containing more pus. Diagnosis, right pyonephrosis and bilateral nephrolithiasis.

Operation: Middlesex County Hospital, September 15th. Nitrous oxide-oxygen-ether anesthesia (Dr. O. R. Witter). On placing patient upon table on left side, respiration became much embarrassed; operation proceeded with under difficulties. Rapid left lumbar incision, exposure of enlarged kidney, and incision of kidney through cortex; 500 c. c. of urine and pus evacuated; stones not palpated. Kidney hurriedly drained with tubular drain and iodoform gauze.

Considerable shock followed the operation, but after the first day the patient was at no time in immediate danger. There was free urinary drainage from the incised kidney, and from 500 to 700 c. c. of purulent urine were discharged per urethram; three rough, irregular, small stones were recovered. The patient steadily improved.

Examination on December 5th: For the past two weeks there had been no elevation of temperature. Patient had gained in weight, strength, and especially in color. The urine still contained a large amount of pus, and a second

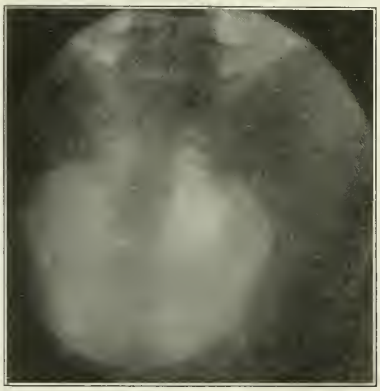

Fig. 3.—Case III. Impacted calculus in right ureter.

skiagraph confirmed the earlier findings, revealing large stones in *right* kidney.

Operation: Believing it was wise to attack this kidney before patient again became septic, operation of nephrolithotomy was performed at Middlesex County Hospital December 5th under nitrous oxide-oxygen anesthesia (Doctor Witter). An oblique, curved incision in the right lumbar region with exposure of the kidney which was fixed by adhesions. Incision into kidney and extraction of several stones, the largest of which measured 4½ x 4 x 3 cm. This stone occupied the pelvis of the kidney extending into the calices. The pelvis and cortex of the kidney were drained with rubber tubes and gauze, the wound closed about the drainage tubes. There was a moderate amount of temporary shock following the operation. Patient reacted well.

Patient's convalescence was most gratifying. He left the hospital at the end of four weeks, had regained his weight, and resumed his work. A small sinus persisted on the right side.

Case III. Calculus anuria following nephrectomy for calculus pyonephrosis. Nephrolithiasis; calculus in ureter; impacted; ureterolithotomy. E. W.; female; aged thirty-five years; white; married; Jewish; housewife; Hartford, Conn.; referred by Dr. William Leichner.

Family History: Irrelevant.

Personal History: Was never seriously ill until ten years ago when she had peritonitis. Five years later, after suffering pain in the left kidney region for several months, patient had a left nephrectomy performed by an excellent surgeon at St. Francis Hospital for calculus pyonephrosis. Patient recovered and remained well for three and one half years when she had severe renal colic on the right side. This occurred at varying intervals until four days ago, when following an attack complete anuria developed She became drowsy, had dull pain in the right renal region and occasional cramplike pains in the right iliac fossa.

Condition at Time of Examination: Medium sized, fleshy, well poised woman, rather pale and of heavy facial expression. Her physical examination was practically negative, except some tenderness in the right renal region. Satisfactory palpation was difficult on account of fat. Some tenderness existed over the course of the right ureter; pelvic examination was negative. Skiagraph showed fusiform stone 1½ to 2 cm. in length in the right ureter, 3 to 6 cm. from bladder. Patient's general condition was surprisingly good, in view of the fact of four days' anuria. Blood pressure, 130 mm. No headache; no vomiting; moderate drowsiness. Cystoscopic examination (Doctor Hepburn) revealed normal bladder, no urine appearing at either ureteral orifice. Ureteral catheter entered right ureter a distance of 5 cm. where it met soft obstruction, due to sacculation and folding of ureter from obstructing calculus. Diagnosis, right ureterolithiasis, causing hydronephrosis and anuria; left kidney absent.

Operation: Hartford Hospital, December 12th. Nitrous oxide-oxygen anesthesia with perfect relaxation. Patient was placed in recumbent position; incision from anterior, superior spine along the course of Poupart's ligament and forward to the median line. Incision was carried through the external oblique fascia; retraction of fascia and abdominal wall inward, exposing extra peritoneally the right iliac vessels and ureter. Ureter was incised, and stone corresponding to x ray picture removed therefrom. As urine failed to escape from incised ureter, a second incision 5 cm. higher was made in the ureter, giving vent to a quantity of urine under tension. Fish tailed rubber tubing was placed at the upper ureteral incision, cigarette drain to the lower angle of wound.

Free urinary drainage through incision occurred for the first few days, the function then gradually being taken up by the bladder. At the end of one week the single kidney function equalled nearly the normal amount for both. The patient's convalescence was particularly free from infection, pain, or temperature, although a slight sinus persists, entirely free, however, from urinary drainage. Patient attends to her household duties and is practically well.

Case IV. Simulating bilateral renal or ureteral calculi R. F., male; aged twenty-one years; native of United States; college student.

Family History: Father died of diphtheria; mother subject to attacks of arthritis; of marked, nervous temperament. Two other boys at present well; one suffered severe streptococcus arthritis followed by chronic arthritis of many months' duration; one operated upon at fifteen for tuberculous peritonitis, with recovery.

Personal History: Aside from the ordinary diseases of childhood, the young man had no serious illness other than that to be described. At fifteen years he suffered for weeks from conjunctival inflammation, requiring special eye treatment for a long period. Following this affliction he suffered from subacute pharyngitis, likewise requiring treatment by a throat specialist for a number of weeks. Following this, while apparently in perfect health, he was seized with abdominal pain; was brought home from school where upon examination he was found to be tender over the right iliac fossa; slight rise of temperature with increased leucocytosis. Enemata and morphine failed to relieve the condition; his physical examination was otherwise negative. Urine free from blood or crystals.

Condition at Time of Examination: Well nourished, muscular, of excellent habits, had had no venereal infection.

Diagnosis of appendicitis was made and appendix was removed. Aside from retention, requiring catheterization on two occasions, his recovery was uneventful. Three months later he was seized with similar severe pains on the *left* side, radiating from the kidney down the ureter to the testicle. Hypodermics of morphine supplemented with ether at the acme of the pains were required at frequent intervals for three days, when the attack suddenly ceased. For three years following similar attacks occurred at irregular intervals, and at the most inopportune times;

at school, at the theatre, in the dead of night, and while skating. Usually it was necessary to bundle him into a carriage or ambulance and drive him to his home. Doctor and nurse were called and remained with him practically throughout the paroxysms which lasted from one to four days. The attacks of pain were at times violent, the patient writhing, holding his breath, clutching at the nurse or doctor, becoming blue in the face, and giving the appearance of a woman in the third stages of labor. He would apparently follow the progress of something down the ureters, speaking of a slipping sensation; finally, after a prolonged exacerbation, he would say: "There, it has passed," and the attack would usually end, quite likely to be resumed on the other side within a few hours. The urine was usually examined a number of times at each attack; on one occasion a number of blood corpulscles were discovered, but never any crystals. The reaction was acid, the specific gravity usually high at the beginning of the attack, and the color darker than normal amber. It was never the pale color of hysteria. On two occasions ureteral catheters were passed to the pelves of the kidneys, and twice a series of radiographs were made which were all negative. The patient had a voracious appetite and ate rapidly. During the intervals his physicians regulated his diet, attended to his excretions, insisted on his drinking large quantities of boiled water. He consulted distinguished specialists in New York and Boston, each one in turn at first believing that the passage of bilateral gravel was the undoubted diagnosis, but in turn, each one finally agreeing that the condition must be a neurosis. During the three years that these attacks occurred most frequently and were most severe, the young man was attending the high school. About the time of his graduation they became less frequent. He entered Yale, passing through the four years with but three attacks. There had been but two attacks during the past two years. He was in other respects well, but still lived in fear of a repetition of these severe paroxysms of pain over the kidneys and ureters.

I recite this case in connection with others, as one of most unusual history, and one in which at first examination the obvious diagnosis is bilateral.

In the speaker's series of seventeen operations for renal and ureteral calculi, eighteen per cent. have been bilateral. Pain at some time and in some form has been present in all of the bilateral cases. Hematuria and pyuria have been found in the urine of all. Renal epithelium and crystals have been less constant; enlargement of the kidney has only been detected at the time of partial or complete obstruction in the ureter or pelvis of kidney.

In reference to the technic of the operations, the anesthesia has been nitrous oxide-oxygen-ether, either in sequence or the three merged to meet the immediate conditions. In the four operations upon the patients in Cases I and II, the kidney had been incised rather than the pelvis. The presence of pyonephrosis, as well as pyelitis, demanded this incision in two instances, and the necessity of exploring and draining the kidney, as well as the removal of stones from the calices, made it the operation of choice. The speaker believes that it is often desirable to incise the kidney pelvis when the radiograph shows stone in the pelvis only, and the kidney is not otherwise diseased. No urinary fistulæ have persisted in patients when the kidney has been incised and drained. The incisions have all been in the lumbar region. Laterally we have placed the patients nearly prone on the table, and elevated the kidney area by a Cunningham attachment. The renal vessels have been held by the fingers during incision and subsequent manipulation; drainage of the kidney has been employed in all cases. In coaptating the hemispheres after complete incision, three catgut ligatures have been carried around the kidney and tied, leaving no suture material in the kidney substance, following the advice of Moore (5), of Minneapolis.

Directly following operation, the patients are given decinormal salt solution by proctoclysis. After a few hours the head and shoulders are elevated, and the patients are given an abundance of water by mouth with urinary antiseptics. If anuria threatens, the drains are temporarily removed; hot packs to the entire body are employed, and hot fomentations over the kidneys are applied, and theobromine sodium salicylate (diuretin) is given hypodermatically.

Conclusions: First. The presence of a renal calculus is always a menace to health and life. When the disease is bilateral the dangers are at least double. In the absence of prohibitive contraindications, the calculus, if too large to pass the ureter, should be removed surgically before serious infection, calculus anuria, and damage of renal tissue have occurred.

Second. Calculi are probably bilateral in from twenty to fifty per cent. of cases, which fact should be constantly borne in mind when diagnosticating or operating for supposedly unilateral calculus.

Third. If both kidneys harbor calculi it is probably better to operate on both at one time, if the patient's condition will warrant the additional operation. This must be determined during the course of operation, as no previously fixed rule can be followed.

Fourth. The more seriously impaired kidney, or the one causing most severe and recent symptoms, should be operated on first.

Fifth. Lithotomy should only follow thorough and exhaustive efforts to establish a correct diagnosis of the condition of each kidney; that such operations should be largely confined to hospitals, attended by men competent and equipped to make such examinations, including cystoscopy, ureteral catheterization, renal function tests, chemical and microscopical examinations of urine, in addition to series of skiagraphs.

Sixth. The methods stated above call for generous cooperation on the part of a number of men, that without such scientific preliminary work these operations are likely to result in disappointment and disaster, while with it, the operative mortality is encouragingly low, and the ultimate results, measured in life and function, are in the great majority of cases most satisfactory.

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IS THE RAPID CURE OF SYPHILIS POSSIBLE?

A Report of Five Cases.

By William F. Bernart, M. D.,
Chicago.

When salvarsan was first given to the general profession in this country (January, 1911), it occurred to me that a treatment of such maximum intensity could advantageously be combined with

intravenous injections of mercury, and curative results possibly obtained in a comparatively short period. My accepted belief at that time was that one or two injections of salvarsan were not curative, although reports upon its rapid and beneficial action were numerous and authentic. By comparison it could readily be seen, in many instances, that the results obtained from fifteen to twenty intravenous injections of mercuric chloride, carried to the highest point of toleration, equaled those of one injection of salvarsan. In view of this I selected a limited number of patients for experimental purposes, and placed them under the treatment to be described.

Of the five patients chosen, the treatment of the first was started in February, 1911, and of the last, in May of the same year, thus making a lapse of time of over two years for the first and nearly the same period for the others. These patients were all in the late secondary period, it being impossible for me to get one with a primary lesion or one in the early secondary stage. They all had had a desultory sort of treatment from the beginning of their disease, and practically none to amount to anything for six months preceding these experiments. Two had papulosquamous lesions of the palms, one had circinate lesions on the arms and abdomen, another had large discrete papular lesions on the body, and the fifth showed no external evidence of his disease. The Wassermann reaction in all was decidedly positive. Preexamination of the heart, eyes, urine, etc., showed these patients to be acceptable subjects for the salvarsan injections.

The plan of treatment outlined was the same for the five patients, the only deviation made being in the amounts of mercuric chloride injected, a matter which was controlled by the tolerance of the individual. The schedule was as follows:

1st to 3rd days—Potassium iodide, 6 grammes (90 grains) daily. This was given for its solvent action and with the intention of increasing the circulation surrounding any isolated foci of the *Spirochæta pallida.*

4th day—Free catharsis and Turkish bath, to thoroughly flush system.

5th day—Salvarsan, 0.6 gramme intravenously.

6th to 7th days—Rest.

8th to 22nd days—Intravenous injections of mercuric chloride daily, beginning with 0.013 gramme (⅕ grain) and rapidly increasing the dose to a point of maximum intensity.

23rd to 26th days—Potassium iodide, 6 grammes (90 grains) daily.

27th day—Cathartic (castor oil) and Turkish bath.

28th day—Salvarsan, 0.600 gramme intravenously.

29th and 30th days—Rest.

31st to 48th days—Mercuric chloride intravenously.

Beyond this no treatment has been given these patients. Wassermann tests, made six, twelve, and eighteen months after, were negative. Wassermann test in Case I, made twenty-four months after, was negative, and the same tests in Cases II and III, made twenty-two months after, were also negative. In Cases IV and V further tests will be made within the next three months. The loss of weight due to the treatment was slight, and more than regained in a few weeks after the cessation of the course. The patients experienced no decided inconvenience from the treatments except from the salvarsan injections. There was no irritation of the kidneys, and the temporary lowering in the hemoglobin scale soon returned to normal. At the present writing all are apparently well and healthy.

Since the introduction of neosalvarsan I have been using this preparation exclusively, as it is practically lacking in severe aftereffects, and in many cases can be given as an office treatment. In view of the less wearing effects of neosalvarsan I have tried this drug in a few selected cases, giving the patients a maximum injection every week for from four to six weeks and filling the intervals with a daily injection of mercuric chloride. Reports on these later cases, however, will be of no value for at least a year to come. Whether the use of the potassium iodide and the preparatory flushing treatment were of any particular value, it is difficult to state. Comparison with the patients who were not given these treatments will show this in the future.

It is true, there are only five cases cited, and it might be argued that these were coincidentally favorable ones, or that the previous treatment of the patients, or the time elapsed since their infection, might have weakened the resisting power of the disease against treatment, and also that a sufficient period had not elapsed to demonstrate a cure, nevertheless, they show what can be done by the judicious combination of two intensive treatments for syphilis. A vast experience with the intravenous use of mercuric chloride, and a moderate experience with the use of salvarsan and neosalvarsan, again prompt me to state that, conditions being equal, approximately fifteen daily injections of the former drug equal in their antiluetic action the results of an average dose of either of the latter salts of arsenic, and that the nonantagonistic action of the two, when alternated, might produce a cure for syphilis in a comparatively short period when properly administered. These experiments refer exclusively to the intravenous form of medication, as it is the only method by which we can overcome the uncertainty of absorption and by which we can obtain a so called intense action.

29 East Madison Street.

HEALTHY SICK CHILDREN.*

By LeGrand Kerr, M. D.,
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Health is a relative term. Common usage is such that we speak of one who is healthy as one free from disease. The *Standard Dictionary* includes this as its definition. To be sick brings forth visions of disease or injury, but not necessarily so, because there are innumerable instances in which one feels sick or incapacitated and still remains free from disease. Only recently we have been apprised of instances in which dissolution took place and a careful autopsy failed to reveal disease of any organ, and the cause of death was unassignable. It is possible to be sick and remain free from disease, or, in other words, there are healthy sick persons. This is peculiarly true of childhood, during which functionating is so susceptible to influences from within and from without.

*Read before the Medical Association of the Greater City of New York, Queens Borough meeting, April 7, 1913.

Admitting such a condition to exist, has it a practical value to the physician? We all appreciate to some extent the desirability of full efficiency in all individuals, but we are not always alive to the importance of efficiency as a remote asset, because we are so keen about its immediate value to the individual and to society. But efficiency maintained at the highest point for prolonged needs is a splendid sort of life insurance. I say "maintained at the highest point for prolonged needs" because there is a common practice of bringing efficiency beyond the point of need, and thereby serious physical and mental damage may result. Boys in their efforts to excel in athletics frequently accomplish such results. But are we fully alive to the influence of a maintained efficiency upon the prognosis of disease as it attacks children? We all can recite instances in which serious disease has attacked those who were efficient and had good resisting powers, and this has not caused very much alarm as regards the ultimate outcome, because the disease was self limited and the victim equipped to combat it. Upon the other hand, as many instances could be recited in which the disease was mild or of a less serious character, and yet an unfavorable outcome was predicted, because of the inefficiency of the patient. In my work among children I am constantly surprising my colleagues with my prognoses; on the one hand expressing doubt as to the ultimate outcome in the case of apparently mild disease, and on the other encouraging them in the face of most serious disease, and in each instance it is because I have learned the value of maintained efficiency in childhood and its effect upon disease. Therefore it is wise and necessary often to spend as much effort in elucidating the previous condition of the child as it is to bring out all the details of the immediate illness. When the child is attacked by disease it is not always possible to estimate its previous condition and often it is only by the most skillful questioning and observation that any valued information can be obtained. The detection of healthy sick children is in most instances only possible by observation of the child suffering from some very slight indisposition. If at this time the physician is observant of all conditions other than the one that immeditaely demands his attention, and takes the time to go thoroughly into the antecedent history of the child, inefficiency will be more often and clearly detected and the healthy sick child will receive the attention that it needs. In taking a history too much importance should not be placed upon the influence of heredity. Too often it has been so magnified that many factors are accepted as being due to hereditary influences which are in no way connected with it. Fortunately the somatic organization of the child is not complete at birth, and while we admit the proper importance of heredity upon development, we must see that environment is a far more potent factor in the production of persons with a lowered resistance and also in their continuance as such. Heredity is more often an "excuse" than a "reason." As a matter of clinical experience with healthy sick children it is a remarkable fact that, when the proper and adequate energy is expended upon the betterment of prevailing economic and social conditions, and physical and mental processes are unhampered and properly guided, what was usually laid to the influence of heredity disappears and we are forced to the conclusion that its influence was small.

By far the larger number of cases are detected through the statements of the mother. It is a common enough experience to have the statement made by her that "the child is not well." Pressed for details or an explanation of her statement, she is not always ready to give it, but is satisfied with the remark that she does not know just what ails the little one, but that there seems to be something wrong; she cannot say what it is. This is as commonly met by an assurance that the child is all right; it looks well, its cheeks are red, and the little one seems lively enough; and that probably it is imagination upon the part of the mother, who is more than likely overanxious about the child. This is an easy and usual way to dismiss the matter, but it is not right. Most mothers know instinctively that their child is not well, even though they be incapable of giving the details. The mere fact that an anxious mother states that she is worried or deeply concerned about her child should excite in the physician the deepest sympathy and arouse all of his diagnostic energies. If this unusual attitude is assumed, in place of the usual one of quick dismissal, most of these instances of healthy sick children will be detected, and the physician will have the consciousness of having restored the child to normal efficiency if the proper methods are pursued. Do not assume that because the mother is unlearned in things medical that she knows nothing about sickness; in most instances, because she knows her child as no one else can know it, she is acute both in the early detection of disease and a departure from the normal.

This is a decade in which more than in any other efficiency is being made a prominent part of all activity; along all lines efficiency is emphasized. The time places a responsibility upon the physician which he cannot afford to shirk either from a social or an economic standpoint. In childhood especially we should be concerned, not with disease alone, but with the maintenance of every organ in perfect condition. Even this is not sufficient; it is good as far as it goes, but it does not go far enough. Perfect condition of every organ goes a long way toward the continuance of efficiency and the successful resistance of disease. But perfect organs are not absolutely essential to the continuance of good health, or even to the maintenance of the normal resistance of disease. A child may have one or more organs diseased, and yet remain in better condition than the child who has every organ perfect. And why? Because perfect functionating of an organ is far more important and necessary to life than mere perfection of structure. There must be coordination and cooperation between the several parts if efficiency is to be maintained, and the failure of one or more organs to act in harmony with the others is sufficient to make the child feel sick, although there be no disease present. Shall we disregard perfection of structure? By no means, but we have the habit of emphasizing it beyond its importance and it is time that we gave the proper value to perfect functionating also.

For the child of these times physiological living is exceedingly important, and from a large experi-

ence with children the writer is convinced that normal efficiency is maintained and strengthened by physiological living. Physiological living will mean something different for each child, and in the same child may differ with the different periods of childhood. This is independent of the effect of the varying activities and influences which modify each period. To the infant it means mostly eating and sleeping; to the older child, play and unrestrained activities of mind and body; to the young person, the acquisition of knowledge and the pursuit of pleasure. This life must be lived in harmony with personal and individual peculiarities, whether they refer to sleep, to diet, to mental effort, or to physical accomplishment. No two children are exactly alike, and what will help one may harm another. It is therefore impossible to lay down more than the most general rules. But one general rule must be observed, and that is that the life be lived in a manner to conduce to the harmonious action of all of the several organs, and to have this a *consistent* action and not by spells; to promote a continuance of perfect functionating of each organ and to have this accomplished *as the result of habit,* rather than of mental effort upon the part of the child. One thing is certain, that any scheme that aims to improve the efficiency of children is doomed to early and certain failure unless it is based upon the physiological fact that the pursuit of pleasure is a perfectly normal and commendable attribute of this period of life. And pleasure is not a matter of minutes or hours; it must be adapted to individual needs. The writer trusts that he has made it clear that the healthy sick child is not the victim of disease, or even of conditions that are associated with disease, although the latter may some time be the case, but is a subnormal individual who usually gets scant attention because his need is not emphasized by pathological changes.

In the treatment of these children there is demanded considerable patience to determine the exact fault and considerable judgment as to how that fault may be corrected, because it is always and essentially an individual problem for the physician. There is always a need for the parent's intelligent cooperation, and this can be secured only by an explanation of just what we are aiming to accomplish. In addition, it may be necessary to adjust the child's diet to individual needs and administer such stimulants or tonics as are clearly indicated. In the great majority of cases the dietetic fault is either a deficiency of fat or the ingestion of food that undergoes putrefactive changes readily, or there may be a combination of the two. In giving a tonic the writer has found that it is nearly always desirable, if not absolutely necessary, to combine with it very small doses of tincture of digitalis, for this seems better than anything else to influence a sluggish or disturbed circulation and enhance the value of the selected tonic. This experience has extended now over several years. Despite all that we may do, some of these children do not respond to any treatment until they are placed in bed, and kept there for at least a week or ten days, and this fact is an important one to remember when we are not meeting with immediate success.

It is not the large things in medicine for which we are commended or condemned, but the little things, the details. The public expects us to do the larger things, but our knowledge of disease has often made us unmindful of the things that lead up to it, and familiarity with the complaints of the adult has perhaps led some to a contempt for their statements in regard to their children. If, however, the hint thrown out by the writer this evening is persistently heeded, the army of healthy sick children will be reduced materially and some physicians will in time gain a reputation for accomplishing what the public will term as "marvelous improvement" in children whom their colleagues disregarded because they did not present definite disease for treatment.

42 Gates Avenue.

AN ADDITIONAL CASE OF FRACTURE OF THE FLOOR OF THE ACETABULUM.

Coincident Fracture of Head of Femur.

By Penn G. Skillern, Jr., M. D.,
and
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Philadelphia.

In *Annals of Surgery* (1912, lv, 1, p. 93) we reported and commented upon seven cases of fracture of the floor of the acetabulum.[1] Since then several cases have appeared in the literature (Vaughan, *Surgery, Gynecology, and Obstetrics,* xv, p. 249, 1912, and Ohnesorg). The following case sheds additional light upon this subject and is unique with respect to the coincident fracture of the femoral neck and head.

J. M., male, aged forty-five years, driver, white, was admitted to the University Hospital, service of Dr. Edward Martin, January 24, 1913, suffering from an injury to left hip. While carrying a stove upstairs he fell in such a manner that the stove struck him upon the left hip, over the greater trochanter. Upon arising he found that he could not move his left lower extremity, at least to very slight degree, and then with much pain shooting down thigh to knee.

Upon examination, injury to pelvic structures was first excluded. Then the tape was employed and revealed shortening of the distance from the symphysis pubis to the greater trochanter (Morris's line) by three quarters of an inch on the left side, when compared to the right. The lower extremities were of equal length, however, between the internal malleoli and the anterior superior iliac spines, and there was no relaxation of the left iliotibial band. On manipulating the extremity, movement in all directions was painful. Pain was elicited by pressing directly upon the left trochanter, but none on jarring the foot. The arc of rotation of the left greater trochanter was not materially changed. Examination *per rectum* was very painful, and was not persisted in. There was some tenderness in the right iliac fossa, above Poupart's ligament. Skiagram (Fig. 1) revealed (a) a vertical line of fracture involving the iliac constituent of the acetabulum; (b) an incomplete line appearing upon the middle of the greater sacrosciatic notch; and (c) a comminuted fracture of the head and neck of the femur, probably with impaction. The approximation of the tip of the greater trochanter to the rim of the acetabulum is plainly shown. While the skiagram does not include both pubic bones, yet from the magnitude of the vulnerating force it is safe to assume that these bones, which form the tie arch of the femorosacral arch, were exposed to a severe strain,

[1] Three of these cases, too late for publication in the *Annals of Surgery,* were published in the authors' reprints.

and another skiagram might reveal a fracture of the horizontal ramus of the pubis, right side, from "contre coup," as occurred in our Case II of the series.

Treatment consisted in rest in bed, manipulations aiming at reduction, and extension in the axis of the limb with lateral traction upon the femoral neck. On the fourth day a gypsum case was applied from the roots of the toes to the costal margin.

The interesting feature of this case is the condition of the femoral head and neck. The head, as is well shown, is apparently broadened from comminution, while the neck is seemingly impacted into it. This inclusion of the femur in the fracture of the innominate bone is surely a manifestation of the severity of the vulnerating force. Ordinarily this force expends itself upon one or other bone, rarely upon both. But from the history of the injury it would seem that the head of the femur was wedged in between two forces—the impact upon it through the neck of the blow received upon the trochanter and the unyielding pelvis. That is, a man carrying a heavy weight upstairs has every muscle tense and the skeleton fixed, so that the pelvis could not recoil from the blow and thus minimize the violence. Furthermore, it is probable that the stove, falling from above, struck the superior rather than the external surface of the trochanter, thus bringing a cross strain upon the femoral neck. In the skiagram the head of the femur resembles the very much flattened head of an ancient hammer.

Fig.—Fracture of floor of acetabulum and of head of femur. Note broadening and flattening of head, showing that acetabulum has been sprung. Arrows indicate sites of fractures.

In our paper we discussed the question: When, given a certain vulnerating force, does the acetabulum yield to fracture and when the neck of the femur? We cite the theory advanced because this case seems to prove it beyond doubt. "The cancellous tissue in the head and neck of the femur is arranged as pressure and tension lamellæ, which spring from the inner and outer walls so as to form Gothic arches. It seems plausible, therefore, that these arches would yield least to force applied in the direction of the long axis of the head and neck, so that the force would expend itself upon the pelvis. If the force strikes the neck of the femur aslant these Gothic arches, however, fracture of the neck may sooner ensue. From this we might conclude that when the neck of the femur is healthy and squarely set, so to speak, it withstands this particular force (i. e., upon the external surface of the trochanter) more stoutly than the floor of the acetabulum." In this case the degree of the violence was sufficient to fracture both bones.

Examined four months after the injury, patient had good motion in all directions, except abduction, which was somewhat restricted. He walked without support, though timidly on account of a prolonged crutch life. He was free from pain.

We are indebted to Dr. Edward Martin for the privilege of reporting this case.

241 South Thirteenth Street.

EXERCISE IN THE SCIENCE OF KEEPING WELL.

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Editor of the Official Paper of the United Bohemian Gymnastic Association in the United States.

The fact that numerous works on preventive medicine, hygiene, exercise, physical culture, gymnastics, athletics, etc., are already in existence proves the importance of these and similar subjects, and the proper development of the body and the mind seems to be universally recognized as the main necessity for the building up of better and healthier human beings, so that with better and stronger individuals a stronger society and nation may be formed. The busy practitioner has often neglected the consideration of exercise in its relation to life, and as a subject belonging to preventive medicine, because in the medical school he was never taught the real value of systematic work in this direction, and, from the physiological standpoint, never could adequately study the utility of exercise, because almost all the reliable works treating of it were based either on military needs or the requirements of special organizations having in view special methods and systems of instruction.

For thirty years I have been engaged regularly in gymnastics and athletics, and have studied the features of the different systems as thoroughly as possible, both theoretically and also in the open field or in the actual work in the gymnasium, while since 1896 I have tried by the Röntgen method to obtain information in regard to the action and possible results of systematic muscular movements upon the tissues. Our knowledge of both the normal and pathological anatomy of human beings has heretofore depended almost entirely on post mortem findings, and these were certainly not completely satisfactory, since the different stages of development and the functional activity of the organs, as

well as the primary causes of disease and the pathology of the various lesions resulting, should be studied step by step during life. The Röntgen method assisted us in pediatrics especially in this respect, and this being the case, we will at once understand why, for instance, a skiagraph of the chest of a little boy, ten years of age and of delicate organization, showed some deformity and depression, near the apices of the lungs, in the vertebræ, clavicles, and ribs on both sides. The lessons in deep breathing and the proper course of movements (free exercise) prescribed gave us the most satisfactory results in about a year, and the skiagraph taken at that time showed the conditions nearly normal. This was a study of a case from the medical standpoint, where the course pursued perhaps removed the field of possible infection, but the opportunities for constant study of children in health and in their development presented in a modern gymnasium, are of still greater importance, viewed from the standpoint of the future, as regards the physical welfare of the nation.

This is especially true if we take into consideration the real effects and direct influences of certain prescribed movements of certain muscles or groups of muscles employed in accordance with impulses received through the nerves from certain centres in the brain. On x ray examination of contracted muscles one will not only observe the changes in shape and development, but the shadow given will be much darker on account of the greater accumulation of blood and the different chemical changes which take place in an active muscle. The fibres of the muscle are shorter and its structure thicker as the result of the exercise and the whole becomes of better quality. This condensation of the tissue causes a temporary deflection of the needle of the galvanometer in opposition to the original current, and we may study the beneficial influence of systematic exercise performed for longer or shorter specified periods with the current of action or the negative variations of the muscle current and the x ray shadows in comparison. The different tissues of the body being made up of different elements, we can anticipate what the radiability of a given tissue, such as fat, muscle, or bone, should be normally, according as we know of what elements it is composed, in proportion to the development, age, and individual characteristics of the subject examined.

These examinations, made regularly for years with all the usual examinations, measurements, and weighing, with a study of the personal history of each pupil, have proved the advantage derivable from systematic gymnastics in accordance with the law of Nature which provides that, within certain limits, parts of the human frame increase in strength, aptitude, and size in proportion to the use made of them. In gymnastics this law is brought to bear successively on every part, including the nerves and the brain tissue where the controlling centres are located, and finally on the whole system in combined action. If the exertion be not carried so far as to induce excessive fatigue, says Schmidt, all other parts of the body—even the internal organs—sympathize with the improving condition of that which is mainly exerted. The circulation, excited from time to time by the exercise, acquires fresh vigor, and the blood being driven with unwonted force into all parts of the system, every function is carried on with increased activity; an improvement in the general health becomes soon manifest, and the mind, if simultaneously cultivated with judgment, increases in power of coordination and reasoning ability. We do not consider here medical gymnastics alone, but would like to promote the interests of all the people and especially the children in educating not only their minds but bodies also, for it must be remembered that in young children even the bony structure yields to the pressure exercised from within. Thus, with the aid of proper gymnastics, the child can develop into a strong, healthy, broad chested man or good woman.

Gymnastic games are so old as to be prehistoric; they are alluded to in the second and twenty-third books of the *Iliad*. Before the time of Hippocrates gymnastic exercises had been adopted in Greece as part of the course of treatment intended to counteract increasing indolence. You find them with the Lacedæmonians and see the best proofs of the harmonious results upon the body in the many beautiful statues of Athens. The Romans also adopted the system, and in subsequent ages of knightly prowess we may observe many deeds of gallantry and fortitude due to good training. Later, from the fifteenth to the seventeenth century, the science of gymnastics, according to Rabelais, Montaigne, and Locke, was forgotten in the education of the children of Europe, being replaced by military drill and speedily neglected in merely civil life. It is only in the year 1770 that gymnasiums for systematic training and the preservation of health were opened by Rousseau, and in 1806 by Basedow and Salzmann in Germany. In accordance with the rules for the promotion of the "usefulness of the movements of the body for health and proper development, especially on the playground," as laid down by the celebrated pedagogue Commenius (1592-1671), Guts Muths worked in 1793, and he had many medical advisers and friends. Jahn followed in 1811 in the same line, and rendered the science so popular that it speedily attracted the attention of the youth in Germany. Sweden soon imitated Germany, or rather Prussia, and since then gymnastics have formed a prominent feature in the educational curriculum in nearly all parts of Europe. Phillips worked in France, Aldershot in England, and Veith, Pestalozzi, Simon, Du Toit, Lenz, Jaeger, Spiesz, and others proved to medical men what physical training might do in health and in certain diseases. Tyrs, the great esthetic and student of the history of nations, with the help of the physiologist Purkynje, gave the world a new system of training of national character, but with the warning that gymnastic exercises must be practised systematically and with many precautions, without onesidedness and always with moderation and due regard to the strength of the individual. The whole medical or other benefit in muscular development may be counteracted by excess; the muscles may be overtrained. The

dangers of such evils from athletics especially, have perhaps been exaggerated, but no doubt the heart in some cases has suffered when the athlete has overdone his "specialty," not having previously had a well regulated course of systematic gymnastics.

Tyrs said: "Not every one for himself, as an individual, not even in the different organizations, but with the common support and endeavor we intend to undertake the task of cultivation and training, and not only for our own benefit, but for the health, happiness and success of our nation and all our people." This national idea, once introduced, has done wonders with Jahn's disciples in his "Turnerkunst" in Prussia, and the gymnasiums of the German turners at home and in this country are in some respects good illustrations of it. Likewise the excellent achievements of American athletes in our public schools, colleges, and universities, where systematic gymnastics are taught. But the many contests, public exhibitions, and expositions of the actual results of exercise in the science of keeping well by gymnastic associations of international character held lately in Europe (Paris, London, Turin, etc.), and the two great olympic game events, gave the Bohemian gymnasts ("Sokols-Falcons") the first place, and their system with voluntary subordination to the cause, and also on account of its physiological foundation and its development of nerve power, which the French call *entrainement*, was praised more than any other. Their active work is divided according to the value of the different exercises and the execution of these as regards general strength, localized strength, agility, elegance, swiftness, endurance, and readiness together, with the effects upon the lungs, heart, circulation of the blood, secretion, excretion, and nutrition, nervous system, and finally, the muscles of the individual. Strict observation of personal hygiene and hygiene in general are also insisted upon. The Slavic brethren of the "Sokols" of the Balkan peninsula furnished the best proofs of their ability and fortitude during the recent war with Turkey, showing the results of proper and systematic training of all the youth, all the people.

"All the history of all creation and especially of mankind represents an eternal struggle for the being and continuance of existence and in this struggle anything not fit to live and objectionable to the whole has to succumb and perish, leaving only the trails and prints of fossils in the individual strata of rocks, or in the letters of books, known to us as history." We know that this is the case, we know what are the preventive measures in tuberculosis and other infectious diseases, we know that a stronger constitution of a patient can fight better any disease, and that there is reason for ever increasing emphasis to be placed upon the importance of attacking any disease, deformity, or infection in the early years of life. Give us, therefore, better and more sensible education for our children; let them have more opportunity for play, recreation in general, games in the open air, and also open air instruction, and remember what good may be accomplished with systematic exercise and gymnastics in all our schools. It is not within the province of this paper to speak of prophylactic measures and regulations in the training of our children in detail, but I should like to say to the profession at large what I believe may be done for the weak child in addition to all the other measures for its proper development, especially the child of predisposition, inherited or acquired. Systematic training, gymnastics, calisthenics, including steps and dances for little girls, and some athletics in the open air may strengthen the physique and mentality of the children in schools, when these are well regulated and graded according to the age, intelligence, and strength of the pupil, and conducted under adequate medical supervision. The people's strength is the greatest asset of a nation, and Westbrook has well said, "In America we are optimistically inclined to believe that the time has come when demand will be made for trained specialists, who shall devote their whole time and energy to the various phases of public health protection." And proper exercise will be among the first subjects considered, educators believing that this subject has a rational and vital place in the educational system.

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MALARIAL HEMATURIA.

By Leland Boogher, M. D.,
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The subject of this paper, malarial hematuria, malarial hemoglobinuria, or blackwater fever, under which several names investigators have designated it, is a condition of great interest to the profession in general and to the urologist in particular. Because of its development being dependent on locations where malarial infections are prevalent, it is little known outside of these regions: Southern States, Cuba, Central South America, West Indies, Africa, Southern Europe, Asia, and India. Observers are influenced in their deductions relative to the cause of this condition by three distinct premises, namely, that it is due to malarial infections; that it is due to the action of certain drugs, such as quinine, methylene blue, and antipyrine; and that it is a specific infection of the kidneys. In the few cases observed and studied by the writer in past years, it seemed that to the first of these, malarial infection, the causation could be properly assigned. The three cases which will be reported in this paper were treated about the same time. Some peculiar symptoms were observed in each, and the urinary complications which were met with constitute the reason for their being grouped together. The almost simultaneous occurrence of three such cases, when no other instances of the affection had been encountered for some time, seemed remarkable.

An accepted definition of this condition is, "An acute febrile malaria occurring in tropical and subtropical regions, and characterized by fever, bilious vomiting, jaundice, and hemoglobinuria." The dis-

ease is most often observed in the middle aged of both sexes, although males seem more susceptible than females, and negroes are almost entirely exempt. A previous attack of malaria generally has been regarded as necessary for the development of hemoglobinuria; but some have noted hemoglobinuria fever with no previous history of malaria, and this appears to be true in one of the cases here recorded. The objections to the theory that drugs having to do with the causation of this condition are given by Deaderick, Breur, Manson, and Craig, and may be stated as follows: 1. That it is restricted in its area of incidence and is absent in some highly malarial localities, where quinine is extensively used. 2. That drugs do not produce it when administered for affections other than malaria. 3. In a number of these cases quinine or other drugs supposed to produce it had never been administered. 4. That when it has followed the administration of certain drugs, these same drugs may be later given with no such result. 5. That where quinine has been given the severity of the attack is in no way related to the amount of the drug taken. 6. That one dose of quinine cannot cause intermittent hemoglobinuria. 7. That the great majority of these patients recover under the continued use of large doses of quinine. However this may be, there are many drugs which, when taken in large amounts, convert oxyhemoglobin into methemoglobin.

Among those investigators who favor the drug causation may be mentioned Koch, Luxis, McCay, Ketchen, and Vincent. According to Murrell and Hake, hemoglobinuria indicates the occurrence in the urine of hemoglobin or methemoglobin, resulting from the destruction of the red blood corpuscles in the general circulation, which should be distinguished from hematuria in which blood, as such, is found in more or less intimate admixture with the urine. In hematuria the urine is smoky, or even opaque, and under the microscope blood cells are found in numbers in the sediment. In hemoglobinuria the urine is clear when passed, but becomes turbid on standing, and the color varies from pink to scarlet or brownish black. It is strongly acid, deposits lithates on standing, and contains but few blood cells. The following theory, propounded by George Richter, may explain the origin of malarial hemoglobinuria: The material from aged erythrocytes (probably destroyed in the spleen) is utilized in the liver by the forming of bile pigments from hemoglobin. Bile pigments are converted in the intestines by bacterial action into urobilin (stercobilin), which is in part reabsorbed through portal circulation, enters the liver, and is again transformed into bile pigments. The source of bile pigments is therefore hemoglobin from circulating blood, and of urobilin, from the portal circulation. When either source supplies an excess of material, too much for the liver cells to take care of, or when the liver cells are impaired somehow and do not functionate properly, then urobilin will pass through the capillaries of the liver unchanged, enter the general circulation, and be excreted by the kidneys (urobilinuria). Such conditions will obtain in internal hemorrhages (absorption of blood), in acute infectious fever (destruction of blood), in intense intestinal putrefaction (increased absorption of stercobilin), and in parenchymatous liver disease (cirrhosis, etc., even in the initial stage). Parenchymatous liver disease may easily remain occult until increased work is thrown on the liver. In malaria erythrocytes are destroyed by the plasmodia, and as long as they are present we find always a urobilinuria, even when plasmodia cannot be demonstrated in the peripheral blood. A coincidence of insufficiency of the liver, of malarial blood, and eventually of a toxic action of quinine on the liver, by its inhibitory action on enzymes (bile forming), will have the effect that not only portal urobilin is not converted into bile pigments, but that the free hemoglobin in the plasma (derived from destroyed erythrocytes) is not converted in the liver, but arrives in the kidneys, giving rise to hemoglobinuria (blackwater fever). A study of these blood cells is interesting. Since the malarial parasite was first described, in 1880, views regarding its action on blood cells have changed. The morphology of the ring form parasite has been extensively described by Doctor Lawson in *Experimental Medicine* for March, 1913, and she with Laveran, Richard, Mannaberg, and others find that it is extracellular and adheres to the periphery. These parasites attach themselves to the corpuscles by slender thread-like pseudopodia which arise from the cytoplasm of the parasite near its nucleus, and by absorption of the hemoglobin destroy its lifegiving properties. Ziemann mentions the fact that while normal blood cells do not dissolve in salt solution, there is in the condition thus produced a rapid solution of the cells and a decided diminution of the blood volume.

Case I. In November, 1912, there appeared the first case of hematuria I had seen in two or three years. The patient was a male, aged fifty-one years; height, six feet, three inches; weight, 235 pounds; married, and a father; family history negative. Had always lived in a malarial district and enjoyed good health until one year previous, when he was seized with marked pain, swelling, and tenderness in the right hypochondrium, which later was followed by difficulty in urination. When seen his appetite was good, and he did not appreciate the fact that he had fever. Mental depression was plainly apparent, and he was yellow in color. Urination was retarded, and there were seven ounces of residual urine. The urine was thick and turbid on standing, and gradually changed to a brownish tinge. On inspection there was found a large, tumorlike protuberance on the right side of the abdomen, and percussion revealed an enormous liver, extending four inches below the lower border of the ribs. The spleen was also enormously enlarged, and a portion of the intestine was seen outlined as the result of chronic enteritis. The pulse was sixty and strong; showing the effect against a retarded venal circulation of a highly toxic condition. Prostate only slightly enlarged. Urine: Specific gravity, 1.010; neutral in reaction; contained much albumin and some sugar; microscopical examination showed depleted red blood cells (eight per cent.) and the plasmodium of malaria. The diagnosis of malarial hemoglobinuria was made, and this was afterward confirmed by microscopical examination of the blood.

Case II. Male; white; sixty-two years of age; complained of inability to urinate without great effort, and of a constant pain and heavy feeling in the perineum, and stated that his urine was black in color. Had had malaria off and on for years and had used more or less quinine, but had not taken any for some weeks, as he had not suffered from chills and fever since his urine appeared black. The urinary discoloration had been intermittent for some weeks, and it was this, together with the desire for frequent micturition and his dysuria, which were the cause

of his consulting me. Skin, grayish leathery appearance; temperature, 100.5° F.; pulse, 82, weak and thready; tongue thickly coated, dry, and parched; liver enlarged and hard; spleen prominent; prostate only slightly enlarged. An almost solid intestine was noted, showing long continued constipation, and the amount of fecal material gradually removed later from the bowels was almost beyond belief. Residual urine, sixteen ounces; reddish black; specific gravity, 1.026; alkaline; albumin in quantity; contained thirty-five per cent. of blood—red and white corpuscles; malarial plasmodia, streptococci, and staphylococci.

Case III. This patient, like the other two, came from a southern malarial district, and his case was unique in some particulars. He was brought by Doctor Johnson, of Hayti, Mo., and was so exhausted that it was hardly expected that he would survive the journey. Forty-eight years old; single; very weak and emaciated; pulse 80, and thready; color saffron yellow; kidneys palpable; liver and spleen much enlarged; chronic constipation of long duration. Had had great difficulty in urination, passing only a few drops at a time for some days; bladder much distended. After some difficulty a catheter was passed and seventy-two ounces of urine were drawn, while it was estimated that at least two ounces were lost in the catheterism. A permanent catheter was maintained for some days, and the total urine was 155 ounces in the first twenty-four hours, sixty-one ounces in the second, and sixty-one and one half ounces in the third. The urine was of the true blackwater type and contained fifty per cent. of blood, which was in such admixture as to make it a true malarial hematuria. It was alkaline, with a specific gravity of 1.030, and contained albumin. Microscopical examination showed red blood corpuscles, white blood corpuscles, malarial plasmodia, streptococci, and staphylococci. He had had repeated attacks of malarial infection, and in past years had occasionally taken quinine. He had had quinine for some weeks prior to his present attack. Doctor Johnson, who had had a number of these cases, stated that when they were truly characteristic in type, as in this instance, there was little chance of recovery.

Etiologically, drug action did not seem to be a factor in any of these cases, and in only one of them could there be considered the slightest probability of renal causation exclusively. I have observed that when, in infection, elimination of the toxic products in a large measure ceases, from an inactivity of some of the glands of the body, and the kidneys are required to eliminate greatly increased excrementitious material and become overtaxed, the effect is to produce pathological renal conditions, which, if not ameliorated by the promotion of elimination through other channels, quickly increases the gravity of the prognosis. If the portal circulation can be immediately relieved, the prognosis improves. I have further noted that when elimination of the blood occurs with the urine, the fever seems to be of no consequence and its periodicity seems to cease; that the gravity of this condition might not be appreciated but for the examination of the urine; that quinine, antipyrine, methylene blue, and kindred drugs do not seem to produce any appreciable effect on this condition, while the presence of the malarial plasmodium appears to inhibit the free elimination of the urine; that anemia very rapidly progresses, so that the promotion of activity in the liver, spleen, and bowels is the desideratum; that efforts directed toward stimulation of the kidneys by the action of drugs are contraindicated, as these organs are already doing more than their share. The more I study pathological conditions in the kidneys, the less faith I place in the use of medicinal treatment for their relief.

Central National Bank Building.

EXOPHTHALMIC GOITRE; HYPERTHYROIDISM.*

With a Report of Five Cases.

By Walter Baer Weidler, M. D.,
New York.

This disease is one that presents points of interest to the internist, surgeon, and ophthalmologist. It is often spoken of as Graves's (1835) or Basedow's (1840) disease, because these writers were the first to describe and classify the symptoms of the condition. The name exophthalmic goitre is a poor one because it suggests only two of the symptoms of this complex disease. Hyperthyroidism is the most recent addition to its nomenclature, and even this is not satisfactory, as it infers a pathological process, which we are not sure exists. Hyperthyroidism implies increased activity of the thyroid gland, with increased glandular production. In exophthalmic goitre we usually find an increase of the heart's action, with corresponding increased frequency of the pulse, nervous irritability, enlargement of the thyroid gland, and various eye symptoms. Of these characteristics the tachycardia and the nervous irritability are perhaps the most dependable, and some writers say that they are present in every case. The enlargement of the thyroid gland may or may not be present, and the eye symptoms usually appear only after the condition is fairly well advanced.

The rapidity of the pulse is often the first symptom to be noted, running from 110 to as high as 190 beats a minute. Usually no cardiac murmur is to be heard until late in the disease. Pulsation of the carotids is often seen, and tremors of the hand, due to a spasm of the extensor and flexor muscles of the wrist, are usually present (Marie). These patients are very nervous, having great fear and being peevish at times, and the fear and peevishness may be followed by profound mental depression, despondency, and, in some instances, insanity. The enlargement of the thyroid gland, as mentioned, is not one of the constant symptoms of this condition, and sometimes only one of its lobes is involved. It is quite possible to have the other symptoms of hyperthyroidism without any appreciable swelling of the gland being demonstrable. There is never as great hypertrophy of the thyroid as is seen in the true parenchymatous form of goitre. Generally with the advent of the hypertrophy the ocular symptoms make their appearance, and it is very often in consequence of the eye symptoms that this disease is first suspected and diagnosticated.

The exophthalmos in itself is always apparent to the eye of the beholder, whereas the glandular enlargement, the tachycardia, and the nervous symptoms may exist without our being cognizant of the fact. Exophthalmic goitre has been most carefully studied by the ophthalmologist, and the ocular symptoms, as classified, are definite, but cannot be considered as diagnostic unless accompanied by some one of the other general symptoms. The exophthalmos is not always pronounced, varying

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in degree from that of a slight staring of the eyes to inability to close the lids. It is reducible by pressure on the globe, the eye receding into the orbit, and this would not be the case if there was a tumor of the orbit. Graefe's sign is the failure of the eyelids to follow the movements of the eyeballs when they are rotated downward. Dalrymple was the first to call attention to the apparent staring of the eyes. This is due to the widening of the palpebral fissures and also to the retraction of the eyelids. Stellwag observed that in these patients there was infrequency and incompleteness of winking. Möbius's sign refers to the difficulty in converging, and Gifford's sign is difficulty in everting the upper lids. Some of the rarer ocular manifestations are palsies of the ocular muscles, affections of the cornea and of the lacrymal gland, edema of the lids, tremors of the orbicular muscles, nystagmus, and partial or complete loss of convergence.

It has been generally believed that in Graves's disease we have an increased secretion of the thyroid gland, as hyperthryoidism implies. The results of all of the research and study of the action of the thyroid have raised the question whether we have a hyperthyroidization or a dysthyroidization. Klose made a series of experiments on animals, using the juices of the thyroid taken from cases of exophthalmic and simple goitre. When he employed the juice from a patient having exophthalmic goitre he was able to produce the same symptoms in the animal, including the circulatory changes. He believes that these symptoms are due to an autointoxication from inorganic iodine, and that the thyroid gland takes iodine out of the body and stores it in the form of iodothyrin. Considered from the pathologist's standpoint, the hyperplasia of the gland has led to a great diversity of opinion. The fact is that in many of the cases a hyperplasia cannot be demonstrated, and in some there is a degeneration of the secretory portion of the gland. There may be in some instances of exophthalmic goitre a correlative action of all of the ductless glands.

CASE I. Mrs. B. L., aged fifty years; Hebrew; family history negative. Patient had usual diseases of childhood; for the past twenty-five years health had been excellent until recently. Had had three living children and one miscarriage. Five years ago consulted a physician, who asked if she was an opium eater; which was denied. Daughter noticed the staring expression of her mother, and that the left eye seemed more widely open than the right. Patient had noticed that she perspired on the left side of face and body. For the past year, following the death of her daughter, her general health had not been so good. Extremely nervous and had great dread of something happening; very sensitive to noises; vague shooting pains throughout the body; attacks of cardiac palpitation after a fright or any slight exertion; difficulty in breathing, increased at night; had lost thirty-eight pounds in the last six months. Frequent urination—total quantity of urine voided in twenty-four hours, forty ounces; Wassermann reaction negative; marked tachycardia, pulse 104, bounding, fairly full; no heart murmurs heard, but a decided pulsation seen in the carotids; slight fibrillary tremors of the hands. Measurement of the thyroid showed some enlargement of the gland. The right eye did not present any of the signs of exophthalmic goitre. The lids of the left eye were wide open; upper lid higher than the right, showing about five mm. of the sclera above; winking infrequent, and when patient did wink there was incomplete closure of the lids; Graefe's sign was well marked; slight paresis of the left superior rectus muscle. Station good; gait steady; coordination good; reflexes active. Treatment: Patient was given thyroid extract, beginning with five grain doses three times a day, and this was continued for over three weeks. There was some reduction in the rapidity of the pulse (from 110 to 72). The exophthalmos seemed to be less. Refraction of the eyes for glasses elicited only a slight degree of myopia, and glasses were prescribed for presbyopia.

CASE II. Mrs. A. H., aged fifty-one years; married; family and personal history negative; two children living and well. Two years ago suffered a shock on hearing of her husband's losing his position, and shortly after this noticed some palpitation of the heart; was easily worried and unable to do her house work. When first seen her pulse was rapid (116) and full, and there was a slight pulsation of the carotids; respiration, 24. The measurements of the neck from above down, over the thyroid gland, were respectively twelve and one half, thirteen, and fourteen and one half inches. There was a visible and palpable enlargement of both lobes of the gland, but more apparent in the right. Frequent sweating of the face and body and frequent urination; urine voided in a day, twenty-four ounces. Wassermann reaction negative, as was also the examination of the urine. There was a rather marked degree of exophthalmos and the von Graefe sign was easy to demonstrate. Stellwag's sign and the infrequent winking were present; little or no loss of convergence and the extraocular movements of the eye normal. Station, gait, and coordination good, and the reflexes active. Treatment: Thyroid extract was given in five grain doses, but seemed to aggravate the symptoms. Tincture of iodine given in ascending doses, beginning with four drops three times a day and was continued for over a month, with some slight relief. Pulse rate dropped to 84. Refraction O. D.+0.75sp.=+0.24cyl. ax. 180°. O. S. + 0.75sp. Reading + 4.50sp.

CASE III. Miss A. C., aged fifty years; American; single; family and personal history negative; had been losing strength and weight and been very nervous for the past year; had the left breast removed about six months ago. Came for a change of glasses, when the peculiar staring expresion of Graves's disease was observed. The von Graefe, Stellwag, and Dalrymple signs all noted; pulse rate 112; at times great mental depression. There was only a slight enlargement of the left lobe of the thyroid gland, and only a moderate degree of exophthalmos; limited convergence, but no defect in the extraocular movements. Treatment: Thyroid extract was given, but seemed to make condition worse, according to the report of her physician. Iodine was recommended, but I cannot say what was the outcome, as the patient passed from my observation.

CASE IV. Mrs. L. R., aged thirty-nine years; Rumanian; white; married; dishwasher; had three children, who were living and well; one miscarriage. General health had always been good until about three years ago, when she noticed that her heart began to give her trouble, and she became nervous and readily excited about trifles. The condition appeared one week after a prolonged stay in the water at Coney Island. When dressing she had a severe chill. Had been under treatment at the Neurological Institute for the past three years. Came to the Manhattan Eye and Ear Hospital December 10, 1912, on account of her eyes. There were present the Graefe sign, the staring expression, the exophthalmos, the widening of the palpebral opening, and the infrequent winking of the lids of exophthalmic goitre. There were also present diplopia and paralysis of some of the external ocular muscles, which are rather rarely seen in this disease, and it was on account of these symptoms that she had been referred to the eye clinic. There was complete paralysis of the inferior rectus muscle of the left eye and partial paralysis of the superior rectus of the right eye. For these affected muscles operation had been performed to correct the very uncomfortable and confusing symptoms. When first seen by us she stated that the general symptoms of her disease were much better than they had been and that she was able to work as before its onset. One month after operative procedure the diplopia had almost completely disappeared. The operations consisted in an advancement of the left inferior rectus, and two weeks later a tenotomy of the left superior rectus . Examination

of the eyes, vision O. D. 5/15, O. S. 5/12. Refraction O. D.—vision=5/12, O. S.—0.50sp.=5/9.

Case V. Miss C. R., aged thirty years; white; American; stenographer. Her trouble began about two years ago. Had a severe sore throat and this was followed by a free loss of hair and later a slight bulging of the eyes and rapid pulse. Had been under treatment for one year before I saw her. On examination I found rather marked exophthalmos, with Graefe, Dalrymple, and Stellwag signs present. Pulse 102, and fairly well marked enlargement of both lobes of the thyroid gland. Rather nervous and easily upset by noises and sudden fright or worry; slight pulsation of carotids; frequent urination. Patient was sent to me for refraction and I found the following: Vision O. D. 5/5, O. S. 5/4. Refraction O. D.+0.37 cyl. ax. 90=5/3. O. S.+0.25cyl. ax.90=5/3.

The treatment of exophthalmic goitre is rather discouraging, and this is more especially true in the cases where the condition is well advanced, with the graver symptoms of the syndrome present. Rest is a very important element in the treatment of these patients, and this should include removal of worry, the avoidance of emotional disturbances, and the relief of eyestrain or any other reflex irritation. Such drugs as scopolamine and strontium and quinine bromide have been used for controlling the nervous symptoms, while on the other hand, digitalis, strophanthus, caffeine, ergot, veratrum viride, aconite, and atropine were given for the cardiac irritations. Ergot and picrotoxine (B. P.) have been especially recommended for their action upon the vasomotor system. Many of the different preparations of the ductless glands have been useful in some cases, but they have not done as much as was expected of them. A freshly prepared extract is the best, and it should be given intramuscularly if possible. The dose should be very small to begin with and gradually increased. The action of the glandular products may be direct or indirect, physiological or antitoxic, stimulant or inhibitory, complementary, supplementary, or antagonistic to normal secretions (Cohen, *New York State Journal of Medicine*, 1912). Of all the glandular extracts or emulsions that have been tried the extract of the thymus gland has given the best and most uniform results, and its action is greatly enhanced by combining with it the extract of the adrenals. Where the muscular tremors are especially pronounced the use of the extract of the parathyroids has given good results. Thyroid extract has been of great service in the cases that show an atrophy of the thryoid gland, and in all cases having any myxedematous symptoms. Extracts from the ovary and the corpus luteum have been tried, but with no success. The use of all these extracts in the treatment of exophthalmic goitre must always be more or less tentative and cautious, because in some of the cases here reported their administration has aggravated the condition. Tincture of iodine in increasing doses has given excellent results in some instances, and in my own observation this is always better borne than any of the glandular extracts.

The efforts of the surgeon in dealing with this disease have been attended with much better results than those of the internist. In the past ten years great advances have been made in the surgery of the thyroid gland, and some have come to the conclusion that operation on this gland is a relatively safe procedure, because the mortality has been greatly reduced. It was originally as high as thirty per cent., and in the first sixteen cases operated in by the Mayos the mortality was twenty-five per cent. This may be partly explained by the fact that many of these patients only submitted to operation very late in the course of the disease. In their later work they report a great advance in their surgical work in this disease, and their latest statistics show a mortality ranging from one to four per cent. and a cure in seventy-five per cent. of their cases. This condition of affairs has been largely brought about by our added knowledge of the disease, great advances made in surgical technic, the recognition of "factors of safety," and the early, instead of the delayed, operation. As has been said, many of these patients with Graves's disease did not come to the surgeon until late in the progress of the disease, when there were serious degenerative changes in the liver and kidneys. Crile and the Mayos go so far as to say that the treatment of these cases should be primarily surgical.

The Mayos report a series of 278 cases operated in for exophthalmic goitre without a single death, which they say is a decided gain over their previous work. They have recognized what they call "factors of safety," which may be summarized as follows: 1. Avoidance of surgical interference during a period of exacerbation or excessive activity of the disease; 2, during gastric crisis or acute delirium; 3, when the dilatation of the heart exceeds one inch. The operation most generally selected is ligation, and this is not a new idea, but a return to an old method of treatment used over a century ago. Thyroidectomy has been accompanied by a much higher mortality than the ligation method in the hands of even the very best operators, and it should be resorted to only after ligation has failed to check the progress of the disease. In the 278 cases reported by the Mayos 105 were single ligations, thirteen were double, thirty were single ligations followed by thyroidectomy, and in seventy-eight thyroidectomy alone was performed. It has been their plan to treat the more serious cases with single ligation of the vessels at the upper left pole, and with this the reaction is only about one fourth as severe as when double ligation is done. If after the ligation the patient gains in weight a thyroidectomy is then done of from one half to one fourth of the gland. In the worst cases of Graves's disease ligation has been followed by a mortality about the same as that following thyroidectomy.

Crile, after operating in 121 cases of exophthalmic goitre, reports favorably, and in reference to the condition of hyperthyroidism that follows this operation he suggests six different causes that might be considered as factors. Resolving the operation into its principal component parts, we have the rôle played by 1, hemorrhage; 2, infection; 3, manipulating and cutting the thyroid; 4, the anesthetic; 5, the psychic disturbances; and, 6, the operative trauma to tissue other than that of the thyroid. The first two he dismisses as inadequate causes. The third he does not believe to be a serious enough factor, and cites cases of exophthalmic goitre that have had the gland massaged without any unpleasant symptoms, and other cases that have been treated by osteopaths with no symp-

toms following such manipulation. As regards the anesthetic, he concludes that a general anesthesia, *per se*, contributes a minor factor; and local anesthesia, *per se*, no factor in the production of the specific reaction. The psychic disturbance in Graves's disease he thinks is a factor of importance in the production of the hyperthyroidism after operations, whether the operation be for the goitre or for some other remote condition. He cites the report of Barton Cook Hirst, who states that, in a series of seventy-one cases where an operation had been performed on various parts of the body other than the thyroid gland in patients suffering from Graves's disease, many of them minor operations, on the whole the operative risk, had the patients not had Graves's disease, would not have been over one per cent.; whereas in his series the mortality was fifteen per cent. Crile's records show a remarkable reaction to trauma in these patients; even after a hypodermic injection of salt solution he has seen the pulse go up as high as 186, with all the other symptoms of severe cardiac irritation. He has adopted a very interesting routine of procedure in his operative work in exophthalmic goitre, but he asks: "Granted that we have mastered the operation, have we thereby mastered the disease itself?" The disease, he thinks, is cured in more than one way: 1. If the brain cells are sufficiently repaired by absolute rest; 2, if the nerve connection between the brain and the thyroid be interrupted in part by tying the upper thyroid pole, which includes half or more of the nerve supply; 3, if the secreting structure of the thyroid be diminished by partial excision or by cytolytic serum (Beebe's).

62 West Fifty-eighth Street.

REPORT OF A REMARKABLE CASE OF ASCITES DUE TO FAILING COMPENSATION IN MITRAL REGURGITATION.

By Frank A. Jones, M. D.,
and
Casa Collier, M. D.,
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The following case is reported, not with the idea of expounding any new theories concerning its pathology or advocating any new or original treatment of such a condition; but, believing that this is a very unusual and interesting case, we report it in detail:

Patient was referred to Doctor Jones by Dr. Battle Malone, February 3, 1912. Personal history: Male, forty-two years of age, single, real estate salesman by occupation. Had lobar pneumonia in 1907. As a boy he suffered from frequent attacks of acute tonsillitis followed by chorea in his early 'teens; since which time he has had several attacks of acute arthritis, which confined him to bed for several weeks at a time. Venereal history negative; Wassermann reaction negative. Had never been addicted to the use of alcoholic stimulants.

Physical examination revealed mitral regurgitation with failing compensation, passive congestion of the liver, and slight edema of lungs. No ascites or anasarca. Slight bronchovesicular breathing at apex of right lung. Urine was practically normal in amount and contained a trace of albumin, but no casts; and this condition persisted until death. Patient was advised to stay in bed and was put on sweet milk diet, nux vomica, and digitalis, with frequent saline purgation. On March 1st there appeared a right sided hydrothorax, and this came and went throughout the course of the disease, but was never aspirated. Ascites also gradually developed, and patient remained in this condition, being confined to bed for a large proportion of the time, until July 11th, when his abdomen was tapped and two and a half gallons of slightly cloudy straw colored fluid was withdrawn. Subsequent tappings are herewith given, with the amount withdrawn each time.

July 11th, 2½ gallons; August 1st, 2½ gallons; August 29th, 2 gallons; September 7th, 2 gallons; September 13th, 2 gallons; September 19th, 2 gallons; September 24th, 2 gallons; September 30th, 2½ gallons; October 14th, 2 gallons; October 17th, 2 gallons; October 18th, 2 gallons; October 20th, 2 gallons; October 21st, 1¾ gallons; October 23rd, 1 gallon; October 25th, 2 gallons; October 27th, 2 gallons; October 29th, 2 gallons; October 30th, 2 gallons; November 1st, 1¾ gallons; November 6th, 2 gallons; November 8th, 2 gallons; November 11th, 1 gallon; November 13th, 1 gallon; November 15th, 1 gallon; November 16th, 1 gallon; November 18th, ¾ gallon; November 19th, 1¼ gallons; November 21st, 1 gallon; November 22nd, ¾ gallon; November 24th, 1⅛ gallons; November 25th, ¾ gallon; November 27th, ½ gallon.

This gives us a total of thirty-two paracenteses, with 51⅞ gallons of fluid withdrawn. These figures are not estimated, but measured, and the amount given is independent of the amount which leaked out through the stab wounds after the paracenteses, which was not inconsiderable. On October 4th, the patient's feet and legs were so edematous that a slough had started on the outer side of the right leg just above the ankle; some ten or twelve punctures were made around this and on the dorsum of the foot with a scalpel. On October 7th, the left leg was given the same treatment. The swelling disappeared immediately and the beginning sloughs had their normal color restored. After these scarifications the patient was compelled to sit with his feet in a wash bowl. This bowl had to be emptied two or three times daily for the first few days, and then once or twice daily for about two weeks; and from then on to his death two or three of these wounds remained open and continued to drain. On October 10th, his scrotum was tapped and scarified.

We believe that a conservative estimate of the unmeasured fluid which was lost through these various channels would swell our total to at least sixty gallons. These sixty gallons of fluid, ranging from seven and a half to nine per cent. albumin, were withdrawn from an individual of about 160 pounds weight, between the dates of July 11th and November 27th. We made several and repeated efforts to establish a diagnosis of tuberculosis, both by examination of sputum and of the fluid withdrawn from the peritoneal cavity, all of which were negative. The patient's appetite remained good, as did his digestion, until the very last day of his life. He never, strange to say, suffered very much from thirst, and although the amount of fluid ingested was never measured, we feel safe in saying that it did not equal the amount lost in a given period of time, and consequently the emaciation was very great. The patient died suddenly on the night of November 30th.

Exchange Building.

USE OF THERMOSTABILE TOXINES IN URETHRAL AND BLADDER INFECTIONS.

*Using the Urine as a Vehicle.**

A Preliminary Report.

By Frank S. Crockett, M.D.,
Lafayette, Ind.

The treatment of purulent urinary infections, due to invasion of the urethra or bladder, in particular, may be divided into two general procedures—those

*Read before the Tippecanoe County, Ind., Medical Society.

measures calculated to decrease germ activity directly through mechanical removal, chemical destruction, and influence directly on the tissues involved, to render them less ideal as a culture medium; and those measures which seek to stimulate the bactericidal elements in the blood either to greater activity or to greater quantity. It is this latter object which is accomplished by a new process, a short cut to an autogenous toxine, about which I have to write.

Specific Toxines. McFarland asserts that the toxic metabolic products are contained within the bodies of the gonococci artificially grown and are disseminated but slightly throughout the culture medium, and that, therefore, vaccines are in reality solutions of toxines and derive their therapeutic value from their toxine content, and not as a mere emulsion of germs. This toxine element seems to be quite stable and is not destroyed by the temperatures usually found sufficient to kill the gonococcus. However, purulent urine or washings of urethral pus contain a specific toxic element after passing through a Berkfeld filter, a process which separates the germs from the solution, and this toxic element will produce a reaction similar to an autogenous vaccine. This would seem to show that the toxine, noted by McFarland as residing in the bodies of the gonococci grown outside the body, was similar to a soluble toxine existing in the pus from infected genitourinary tissues and which does not depend upon the presence of dead germs for its potency. I have devised an extremely simple method of using this specific toxine from urethral and bladder infections. I have used it empirically in order to gather sufficient clinical data to afford a working basis for the more technical experiments which Professor Hilliard, of Purdue University, has very kindly offered to work out with me.

The conclusions drawn in this paper are based on clinical observations in some twenty-five cases of urethral and bladder infections and are published now as a preliminary report, in the hope that others will use it with the same gratifying results that I have experienced. I have not had the time or opportunity to review the literature of present day bacterial products, and am not even prepared to enter into a discussion as to the identity of my therapeutic agent; but assume that it is a bacterial toxine either simple or complex, single or multiple. In a number of my earlier cases I washed the pus from the urethra with sterile water but found that it offered no advantage over the use of urine as a vehicle, and as many patients with gonorrhea will have, at certain stages of the disease, no pus or very little in the anterior urethra, the urine being loaded with pus from the posterior urethra or prostrate, the advantage of urine as a vehicle in cases like this, is apparent. My effort has been to keep the process so simple that anyone can use it; so that it will be attractive to the practitioner isolated from the city's laboratory, a help to him who needs it most.

Complications Causing Temporary Immunity. Several years ago I noticed the phenomenon of a gonorrheal infection extending into the testicle, accompanied by a rise in temperature of several degrees and a chill at times, with headache, malaise, etc. At other times I had observed that a patient would show a rise in temperature, together with the other symptoms described, without being able to locate an extension of the disease into new tissues, and in both instances I noted that the urine would become clear, the urethral soreness would disappear, and for a day or two days the patient, from a urine point of view, would seem to be well. The latter variety of febrile reaction led me to believe that the patient was truly suffering from a cold, and I concluded from this observation that any febrile reaction would check the activity of the gonococcus. Shortly afterward I read a short note in the New York Medical Journal, by Harold Neuhof, on The Effect of Artificially Induced Fever upon Some Chronic Inflammatory and Ulcerative Lesions. The author had used Coley's fluid as a means of inducing the artificial fever, and the efficacy of this agent as a means of inducing the artificial fever occurred to me; but before I had time to put my scheme into effect I had a patient in whom considerable fever existed from an intercurrent disease without in any way affecting the activity of the gonococcus. This observation destroyed my confidence in my earlier conclusions, and my idea has marked time until recently.

Stock Vaccines. Several years ago, shortly after Wright's announcement of his vaccine therapy in germ disease, I published my observations in a series of cases treated with stock vaccine and controlled clinically, instead of by the opsonic index. I found at that time that the stock vaccine, while an efficient aid, was not trustworthy in many cases; that the vaccine did not always seem to fully fit the case. My later use of stock vaccine has supported this general experience, and may be accounted for from a number of points of view, such as the probability that the "stock vaccine fails to carry with it all the twelve strains of gonococci known to exist," as put forward by McCowan, of Indianapolis, recently. This is because there is reason to believe that specific reaction may be restricted to a strain or various strains of the same germ; or we may accept the theory of Duncan that the reaction can be ideal only when the vaccine contains all the elements of germ activity existing at the moment, and that to-day's vaccine may not fit to-morrow's condition.

Soluble Toxines. Recently Duncan, of New York, writing on autotherapy, formulated the general rule that "when the pathological exudate or end product, or a dilution of the same, of any localized, loosely localized, and possibly nonlocalized infectious disease is filtered with a Berkfeld filter and the filtrate injected hypodermically, or placed in healthy tissues, antibodies specifically corresponding to the disease will tend to develop." After reading Duncan's report my earlier observations recurred to me, and I was able to explain the phenomena mentioned earlier in this paper. Using Duncan's theory as a working basis, I concluded that the placing of germs alive into tissues for which they had no special affinity, i. e., in which they did not readily grow, would not be followed by abscess or pus formation at the point of injection, and the general reaction following should be the same as Duncan observed, only more specific in

that my solution would contain both soluble toxine and the bodies of germs with their toxine content. This I proceeded to do.

CASE I. The first patient treated with the new toxine solution had been under treatment for nine days, and received in that time twelve treatments (irrigations), with marked improvement in volume of pus discharge and in irritation incident to the gonorrheal infection, but without causing a reduction of the discharge below a small, thin, yellow flow in two hours' time. The first urine never failed to be at least very slightly cloudy, while the second urine, which was turbid when first seen, had varied between clearness and very slight cloudiness. The patient passed three and one half ounces of urine into a sterile container. This was filtered with ordinary filter paper to remove the gross elements, and then centrifuged at a high speed for five minutes. This centrifuging was done in the hope that all material and germs passing through the paper filter would be collected at the distal end of the tube, leaving a gonococci free solution at the top which could be injected hypodermically. (Later I found that this supernatant liquid contained some gonococci, mucus, and epithelial débris.) One tenth of one cubic centimetre of the supernatant liquor was injected hypodermically directly under the skin of the forearm. The irrigation was continued as usual throughout this history. The next day the patient reported that at six o'clock in the evening following the treatment he had a cold sweat lasting about an hour, was sick at the stomach, and had a pain in the back of his head, while his arm was slightly sore at the point of the injection. However, his discharge had disappeared, his first and second urine was clear, and the pains which he had been having in his legs for some days previous were gone. The reaction had spent its force, and he was for the moment apparently free from his disease, to his great delight. The following day he was still free from evidence of gonorrhea. The next day he failed to report, and the day following, or the fourth day after treatment, he returned with a thin yellow discharge from the meatus, similar to the one at the time of the first hypodermic injection. His first urine was slightly cloudy, but his second urine remained clear. Knees were a little stiff and bladder "felt heavy." One tenth c. c. of filtered and centrifuged urine was again injected. His first reaction was watched with considerable interest, as I felt that I was dealing empirically with an unknown agent. If nothing more up to the present time had been obtained, this one reaction, with its complete cessation of germ activity until the fourth day, together with the complete neutralization of absorbable toxines resulting in the patient's sense of well being, would be well worth recording. The following day he reported that no discharge had been noticeable since ten o'clock the night before; knee pains and bladder sensation gone, arm slightly sore, but no general reaction noticed. Next day, arm slightly swollen, but no discharge, although first urine showed slight evidence of pus. Next day later, or third day after hypodermic injection, a thin discharge had appeared and the first urine, amounting to one and one half ounces, was very slightly cloudy, and the rest clear. To this point I had waited for the reappearance of the discharge each time, in order to learn the duration of the period of germ inactivity. The subsequent record of this case is not given, as it was of no experimental value to this paper.

Stock Vaccine Followed by Autotoxine. In the following case stock vaccine was used for a short time, and then followed by the autotoxine.

CASE II. Acute specific urethritis; first day of discharge. Treatment, started December 6, 1912, consisted of irrigations twice daily for the first week. Usually this will stop discharge in a week or ten days. This case proved unmanageable, and the infection became gradually more severe until the tenth of December, when stock vaccine was given with an initial dose of eighty million. December 17th, infection has continued to increase in violence. Stock vaccine twenty million. December 21st, urine contains still more pus. I, cloudy; II, clear; vaccine, twenty million. December 23d, urine, I, cloudy, II, clear; stock vaccine, twenty million. December 28th, urine, I, cloudy; II, clear; stock vaccine, twenty million. December 31st, past two days no discharge; yellow to-day. Urine, I, cloudy; II, not obtained; no vaccine. January 1st to 5th, patient had vesical tenesmus; stock vaccine, 120 million. January 8th, tenesmus gone; stock vaccine, 120 million. January 14th, urine, I, cloudy; II, slightly cloudy; slight left epididymitis. First urine passed through Berkfeld filter; 0.1 c. c. injected hypodermically under skin of forearm. January 16th, after holding urine two hours only a slight excess of mucus. Urine, I very slightly cloudy; II, clear. Four or five hours after last treatment testicle more painful.

By the morning following testicle had decreased in size and was less painful. Morning after last treatment, slight headache. To-day pain in testicle practically all gone, though testicle still enlarged and hardened; headache and pain in legs gone. Patient declared he felt better than at any time since starting treatment. The first three and one half ounces of urine passed was diluted sixteen volumes and centrifuged for ten minutes; 0.1 c. c. of supernatant liquor was injected subcutaneously in right forearm; no irrigation. January 18th, patient free from discharge since last treatment, and at six p. m. to-day was unable to find a discharge. At 8:45 p. m., however, when he reported for treatment, he expressed a whitish yellow drop. Had retained urine practically three hours. Urine, I, very slightly cloudy; II, clear. Patient reported a general reaction the day following treatment that made him feel as if he were catching cold. The testicle had decreased over one half in size from two days before. First urine passed through Berkfeld filter; 0.2 c. c. injected. January 20th, reported no reaction; dose probably too small. No discharge; urine, I (15 c. c.), very slightly cloudy; II, very slightly cloudy. First urine centrifuged five minutes and 0.3 c. c. injected in right arm. Massaged prostate. January 22d, suffered heavy reaction; locally, a red swollen place about three by four inches. General reaction consisted of severe headache; fever but no chill; pains in all the muscles. After holding urine two hours no discharge; both urines clear. Pus could not be obtained, and no toxine could be given; massaged and irrigated in an effort to hold the gonococci in check. Patient was treated six times afterward by massage, with no reappearance of the infection.

Autotoxine in Cystitis. In the following case the autotoxine was used for cystitis due to enlarged prostate:

CASE III. Referred by Doctor Arnette. Retired farmer, aged seventy-seven years, in good flesh and apparent good health until attacked with an acute cystitis about three months before coming to me. During past month urine foul; was compelled to use catheter constantly; complained of a pretty bad rheumatism (?) in back and hips. Urine by catheter, specific gravity, 1.020; alkaline; odor, foul; cloudy, with a heavy tenacious mass of mucus that passed through the catheter slowly and gathered in the base of the urinal. Condition due to enlarged prostate. No microscopical examination made. First seen on the twelfth day of January. Was irrigated with silver nitrate daily, with improvement in rheumatism and general discomfort, so that sleep could be indulged in without resorting to hypnotics. After about four treatments urine, however, was not improved in quality. Specimen of urine was diluted six volumes and centrifuged for five minutes; 0.1 c. c. of the supernatant liquor was injected in the left arm. Next day reported slight local reaction, but no general reaction. The urine, while still cloudy, failed to show any of the mass of tenacious mucus which had been so persistent heretofore. Patient might have had a slight exacerbation of his general and bladder symptoms, as he was compelled to resort to hypnotics to sleep. Bladder irrigation continued, and next day urine was only very slightly cloudy, with filaments in it. The undiluted urine was centrifuged ten minutes and 0.1 c. c. was injected. January 20th, patient reported reaction with headache and malaise the day before. He was now considerably worse, his urine being cloudy with masses of mucus floating in it. Urine was diluted to double its volume with sterile water, centrifuged, and 0.1 c. c. injected hypodermically. January 21st, no general reaction; urine cloudy, but containing no mucous masses. I determined to give no toxines for several days, and use silver irrigations only, in order to see if the urine would

clear up promptly. January 22d, urine not so good. January 24th, urine greatly improved; note made that urine seemed to improve just as well on the irrigation alone. January 25th, urine considerably worse, with tenacious mucous mass passed. Decided now to use toxine in larger doses than before and compare results, using silver as routine treatment; 0.5 c. c. injected after being boiled. January 26th, patient reported reaction though not severe; urine cloudy; slightly improved. January 27th, urine almost clear; silver irrigation. January 29th, urine clear; phthalein test; no treatment. January 31st, urine still perfectly clear; irrigation. February 2d and 3d, urine clear; irrigation; February 8th, urine had become slightly cloudy during the five days since last treatment; irrigation. February 9th, urine almost clear; irrigation. February 12th, urine turbid, odor strong; right testicle swollen; 0.5 c. c. boiled urine injected. February 13th, general reaction; right testicle less swollen and sore; irrigation. February 14th, patient felt worse; urine very slightly cloudy, but improved; 0.75 c. c. injected. February 15th, urine cloudy; general reaction; testicle still swollen and now very sore. Patient put to bed, probably overloaded with toxine; repeated too soon. February 17th, urine clear; right testicle less swollen; left testicle slightly involved. The urine probably cleared up at this in consequence of the extension of the germs into the left testicle. This case was treated merely in preparation for surgical removal of the prostate, which was done on the twentieth of February.

This was the first case of this nature in which I used the toxine, and the first few treatments were given cautiously. The treatment was, however, followed by substantial and prolonged improvement.

Summary of Clinical Experience. The first use of my toxine was carried out with small doses of 0.1 c. c. of the raw urine, in conjunction with the usual routine treatment of gonorrhea. This produced an ideal reaction, finding expression in partial or complete cessation of germ activity, but prone to produce excessive irritation at the point of injection, and open to the objection that the infecting organism might be carried through the blood stream with the resultant localization of the disease at some other part of the body. The temporary increase of antitoxine makes such an accident less probable. After heating the toxine solution the local reaction disappeared or was so slight that the patient seldom mentioned it. The general reaction was not nearly so violent and the local improvement was not so pronounced. This led me to use larger doses, with the result that a few patients appeared to be overloaded with the toxine, so that they failed to improve or actually seemed worse. On discontinuing the toxine these cases would improve markedly in the succeeding few days; which seemed to point to an overwhelming of the patient's resistive powers. This has led me to use smaller doses, ranging from 0.1 c.c. to 0.5 c.c. as a routine dose for gonorrhea; 0.5 c. c. to 0.1 c. c. in cystitis of old men; and 1 c.c. to 2 c.c. in colon bacilli infections. Clinically I have had the least noticeable improvement in colon infections, and in these would recommend longer periods between treatments.

Relative Considerations. It is true that a reaction will follow the injection of either the bacterins of Wright or the so called toxine complex obtained by filtering with a Berkfeld filter a solution containing pus. Would it not be reasonable to suppose that since we get wholesome results from the use of either of these that the absence of either would leave incomplete that strict specificity of the autogenous product which is held to be necessary to be ideal? This, coupled as it is with the proportion of each which is natural to the disease at the moment (also any variations in quality of each that may occur from day to day), should make this, when fully understood, the ideal autogenous product. The process as used by me in this preliminary series is not complicated, needing no elaborate laboratory equipment nor technical training. It is ideal in its cheapness, as it costs nothing, while it places in the hands of the general practitioner a therapeutic means that will greatly facilitate his control of the acute and subacute stage of urinary pus infections. It is not maintained that one can dispense with routine treatment or the aftertreatment usually needed to restore such tissue changes as may occur incident to the local congestion; nor should one relax his vigilance in hunting out all the possible foci of infection, or rather reinfection, such as are prone to exist in the urethral glands, prostate, vesicles, etc. I have found no practical way so far of determining the exact dose to be given at any one time. The treatment must be practised empirically for the present, the physician basing his dose on experience. While it should be possible theoretically to cure any pus disease with this toxine alone, yet, at least until it is more thoroughly understood and controlled, the usual measures of routine treatment should not be dispensed with. The urine should be modified with copious quantities of water, together with such urinary antiseptics as are best suited to the condition presenting. The local cleansing with irrigation, using at least 500 c.c. of fluid, together with the observance of scrupulous cleanliness on the part of the patient, must be insisted upon. This "treatment complex," when shrewdly combined, produces unusually quick results in my hands.

I would value the opinion of physicians who will give this toxine solution a trial in their practices, and will be greatly pleased if they will favor me with reports of their results.

515 Columbia Street.

Therapeutic Notes.

Treatment of Vomiting in Uremia.—R. Oppenheim, in *Progrès médical* for January 11, 1913, states that although the view is prevalent that vomiting, tending toward elimination, should not be interfered with when of mild degree, in some cases this symptom must be combated because it is so persistent as seriously to hinder the feeding of the patient. Under these circumstances restriction to two litres of water daily, taken cold and in small mouthfuls, with complete avoidance of food, will sometimes bring about cessation of the vomiting in two or three days. If not, the stomach should be washed out once daily with an alkaline solution, such as artificial Vichy, and bowel irrigation with one and a half to two litres of boiled water be likewise practised once or twice each day. Where there has been no rise in blood pressure, the next measure to be resorted to is hypodermoclysis, from 200 to 300 grammes (six to ten ounces) of a thirty per cent. solution of glucose being introduced twice daily. To these procedures suitable eliminatory

treatment should be added—stimulation of the skin by dry or alcohol rubbings, and of the kidneys by diuretic drinks; local or general blood letting; renal organotherapy, especially in the form of subcutaneous injections of serum from the renal vein, and, finally, removal in so far as is possible of all toxic influences, dietetic, or medicinal.

If these measures prove insufficient to arrest vomiting, symptomatic medication will have to be resorted to. After every enema given, nutrient or otherwise, one tablespoonful of each of the two following mixtures should be administered:

(A)

℞ Potassii bicarbonatis, ...ʒss (2 grammes);
Syrupi, ...ʒi (30 grammes);
Aquæ, ...ʒiii (100 grammes).
M.

and after the preceding:

(B)

℞ Acidi tartarici, ...ʒss (2 grammes);
Syrupi acidi citrici, ...ʒi (30 grammes);
Aquæ, ...ʒiii (100 grammes).
M.

Where these fail, sodium citrate should be tried:

℞ Sodii citratis, ...gr. lxxv (5 grammes);
Aquæ destillatæ, ...℥x (300 grammes).
M. Sig.: One tablespoonful at short intervals.

Or, one of the following combinations may be availed of:

I.

℞ Mentholis, ...gr. xv (1 gramme);
Alcoholis, ...ʒvi (20 grammes);
Syrupi, ...ʒi (30 grammes);
Aquæ destillatæ, q. s. ad.....ʒv (150 grammes).
M. Sig.: One teaspoonful every hour.

II.

℞ Tincturæ iodi, ...ʒiss (5 grammes);
Chloroformi, ...♏lv (5 grammes).
M. Sig.: Five drops two or three times a day.

III.

℞ Ætheris, ...♏xvi (0.8 gramme);
Alcoholis, ...♏xl (2 grammes);
Aquæ aurantii florum, ...ʒiiss (10 grammes);
Syrupi, ...ʒi (30 grammes);
Aquæ, ...ʒiii (100 grammes).
M. Sig.: One tablespoonful every two hours.

The use of cocaine, morphine, belladonna, or antipyrine should be avoided in these cases.

External measures which may prove of some use are: 1. Application of hot compresses to the epigastrium; 2, an ice bag; 3, a spray of ether or ethyl chloride; and, 4, counterirritants.

Salvarsan in the Treatment of Tabes Dorsalis.—Leredde, in *Bulletins et Mémoires de la Société de médecine de Paris*, February 7, 1913, reports good results from energetic treatment with salvarsan or neosalvarsan in these cases. He considers the new remedies, administered in the manner he describes, distinctly more beneficial than mercury. In thirty-nine cases of tabes, given altogether 2[illegible]8 injections of the arsenicals, a clinical cure was obtained in nearly all who had received three or more complete series of injections as advised by the author.

The feature on which greatest stress is laid is the use of full doses, viz., 0.01 gramme of salvarsan or 0.015 gramme of neosalvarsan to each kilogramme of body weight. The earlier doses, however, should be small; thus, in the first series of injections, the doses given should be: Salvarsan, 0.2, 0.3, 0.6, and 0.6; or, neosalvarsan, 0.3, 0.6, 0.9, and 0.9—unless recent bulbar or meningeal manifestations should require even smaller amounts at first. The subsequent series of injections should each be preceded by a resting period of one month. The second series should consist of three injections, 0.4, 0.6, and 0.6 of salvarsan, respectively, or corresponding doses of neosalvarsan, and subsequent series, of three injections of 0.6 each, 0.9, or even 1.2 of neosalvarsan.

In using neosalvarsan, which he prefers to the older remedy, the author injects at weekly intervals and not on alternate day, as has been advised.

The ultimate result of the treatment is a disappearance of recent symptoms and of many of the long standing symptoms—not the Argyll Robertson pupil or arthropathic deformities; the progress of the disease is arrested. The Wasserman reaction gradually weakens and becomes negative. The beneficial effects are most striking in respect of the pains, the motor disturbances, visceral paroxysms, bulbar phenomena, and general health. The treatment is unattended with danger if faulty technic and excessive initial doses are avoided and due attention paid to contraindications. No serious untoward effects were observed in any of the cases treated. The alleged aggravation of tabes by salvarsan treatment is simply an expression of Herxheimer's reaction, a normal result of the effect of the drug on syhpilitic lesions.

Leredde is so convinced of the value of the systematic treatment he employs that he states most of the measures hitherto used in tabes, including analgesics, can be wholly dispensed with, only a few physical methods, such as motor reeducation, remaining useful in certain cases to hasten the disappearance of motor difficulties.

Mouth Wash to be Employed in Scarlet Fever.—Sevestre, in *Nouveaux Remèdes* for February 22, 1913, is credited with the following mixture for purposes of oral antisepsis in scarlatina:

℞ Phenylis salicylatis, ...gr. xxx (2 grammes);
Acidi borici, ...ʒiiss (10 grammes);
Alcoholis, ...ʒx (40 grammes);
Aquæ bulliatæ, ...Oi (500 grammes).
M. Sig.: For washing out the mouth.

Treatment of General Septic Peritonitis.—S. M. Hay, in the *Canadian Journal of Medicine and Surgery* for February, 1913, reminds us that in this condition the patient should be placed in the Fowler position as soon as the diagnosis is made and again for two or three days after the operation. Large quantities of normal saline solution should be given by the bowel, either continuously or intermittently, after the intervention. A single dose of morphine may, if necessary, be given at this time.

From twelve to twenty-four hours later, the bowels should be caused to act by means of lāxative enemata. The following combination has proved excellent for this purpose in the author's hands:

℞ Olei terebinthinæ, ...
Glycerini, ...
Magnesii sulphatis (sat. sol.), } ..āā ʒii (60 c. c.);
Aquæ, q. s. ad.....ʒxii (400 c. c.).
M. Sig.: Warm and administer high up.

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THE AMERICAN MEDICAL ASSOCIATION SESSION.

The sixty-fourth annual session of the American Medical Association, which closed in Minneapolis on Friday, was attended by a large number of members, as our report published in the present issue indicates. Although St. Paul and Minneapolis carried off the record of the United States as heat centres during the earlier part of the week especially, the local committees had labored so industriously to insure the comfort of their guests that the torrid temperature caused but little discomfort and failed to hamper the work of the sections. The cool assembly halls of the University of Minnesota, and particularly the new buildings of the medical department, proved veritable havens of relief in this connection.

In to-day's issue we present a telegraphic summary of the meeting of the House of Delegates and other matter of interest to our readers. The next two issues will contain what to them will prove of greatest value, a summary of the practical papers read before the sections. As will be seen, many were noteworthy and rich in new suggestions. The American Medical Association is to be congratulated on the splendid showing made.

RADIUM DEPOSITS IN THE UNITED STATES.

No group of men are more interested in radium, from a practical standpoint, than are physicians; for radium promises to give them very material assistance in the control of certain diseases in which they often have been almost helpless. Physicians who have followed the foreign medical literature recognize that radium is not used in this country to nearly the extent which would be justified by the results already obtained abroad, even after making full allowance for the undue optimism which usually accompanies any new form of treatment. It is also generally recognized that the investigation of the possibilities of radium and analogous substances in therapeutics has scarcely been begun and that the profession in America has had little part in what has already been accomplished. This has resulted largely from the almost prohibitive price of radium, which has restricted its use to a few of the wealthier hospitals and individuals.

All of the radium so far used in the United States has come from abroad, and the impression has been general that radium bearing ores do not occur in noteworthy quantities in this country. Physicians will doubtless be surprised, therefore, to learn on the highest authority (C. L. Parsons, in the *Journal of Industrial and Engineering Chemistry* for May) that the United States leads the world in the possession of radium bearing ores; in fact, ores were mined in this country last year which contained more than twice as much radium as that produced in all the rest of the world. Still more surprising is the fact that no radium was extracted from this ore in the United States; part of the ore (that of a low grade) was thrown on the dump, leading to the irretrievable loss of this most precious of substances, while the high grade ore was shipped abroad, to be there worked up and part of the radium returned to the United States to be sold at a very high price, while the remainder is being used in Europe for the treatment of disease and for further scientific study.

This is a condition of affairs which is humiliating to those who take pride in the scientific achievements of their country, but if any action is to be taken in regard to it, it should be taken promptly, for, as Parsons says, our supply of radium is rapidly being depleted. When radium was discovered in St. Joachimsthal in Austria, the Austrian government purchased the mines, and since then has carefully supervised their working, so that there is the minimum of waste, and has controlled the radium produced so that the maximum benefit may be derived by the Austrian people. If our federal government can spend large sums in conserving the

natural beauties of the National Parks, it should be possible for it to make a liberal appropriation for the scientific study, by the Bureau of Mines and the Bureau of Public Health, of our radium deposits, which have such great possibilities of being of inestimable value both to science and in the relief of pain.

A somewhat similar condition of affairs obtains in regard to another radioactive substance which seems to have distinct therapeutic possibilities, viz., thorium. Although this element occurs in the United States, the little that has so far been used here seems to have been imported; recently a Berlin physician made a special trip to this country to treat a patient with thorium. Similarly there are reasons for believing that some of the springs of the United States have radioactive properties equal to those of some of the European springs to which so many Americans journey each year. Thus there are not only humanitarian but economic reasons why we should endeavor to develop our resources along these various lines; this can probably be done only by the cooperation of the federal government through its excellent Bureau of Mines and its Public Health Service.

DANGEROUS PRESCRIBING IN GERMANY.

The American physician has been taught for many years that the practice of medicine is carried on upon a much higher plane in Germany than in the United States, that the position of the physician in the community is a most enviable one; and he has heard physicians of German birth sigh longingly for the creation here of conditions *grad wie in Deutschland* The Prussian secretary of the Interior has recently issued a decree which throws an interesting light upon the practice of medicine as conducted in Germany, tends to dispel some of the glamour with which distance and imagination have invested the German doctor, and makes us a whit less envious.

It seems that the "lodge" doctors, those who minister to the ills of the various *Kranken-Kassen*, or sick benefit societies, at so much, or rather so little, annually per capita, have been compelled by the societies which employ them to prescribe as economically as possible. Instead of prescribing divided powders, the whole amount is prescribed in bulk and sent out with instructions to take "as much as will go on the point of a knife." Occasionally the patient himself is instructed to divide a powder into twenty-five parts and to take one of these or one half of one at certain times. In the decree above referred to the secretary of the Interior cites these facts and gives specific instances which came to his knowledge of the extremes to which this practice goes. In one case four tenths of a gramme of acetphenetidin was prescribed for a child with directions to take half. In another instance, ten grammes of compound antipyretic powder were prescribed with instructions to take as much as would go on the point of a knife as a dose, and in still another one, corrosive sublimate was ordered and the patient instructed to dissolve it in a beer bottle full of vinegar!

The secretary points out the serious objections which exist to this method of prescribing potent drugs. The absence of written directions, he shows, is a source of danger to the patient, since instructions given orally may be easily forgotten or misunderstood; the patient or his nurse is often not in position to properly carry out the task of dividing medicines or making up preparations, etc. The secretary therefore calls upon all the presidents of the Prussian provinces and the chief of police of the city of Berlin asking that they request the district medical officers to use their influence with the physicians in their respective districts to induce them to write out prescriptions free from the objectionable features cited above, and with the directions clearly and distinctly set forth in writing.

THE THERAPEUTICS OF MOUNTAIN CLIMBING.

Soon the open season in the Canadian Rockies, the Swiss Alps, the Jotunheim of Norway, the mountains of the Tyrol, and the Pyranees will begin again. For his patients and for the physician with sound heart and limbs, and a love of unspoiled nature implanted in his breast, no holiday can be more inspiring or more lasting in its beneficial effects than a few weeks of mountain climbing. The intense insolation of great altitudes and the pure, rarefied atmosphere are good for one's metabolism. Above eight thousand feet the freedom from bacteria is absolute. On the summit of Mont Blanc there are only 150 dust particles to each cubic centimetre, instead of the 150,000 or more present in the air of large cities. Amid such conditions the hemoglobin of the blood is increased, the heart's action is strengthened, one's respiratory quotient rises, the muscles are hardened and made more powerful, osmosis and activity of the body cells are augmented; superfluous fat and water disappear. The gouty toe, nervous instability, and the lugubrious blue devils of indigestion and insomnia are exorcised and banished. The impending shadow of arteriosclerosis is indefinitely postponed to a more distant day by the simple fare, the healthful physical exertion, the mental rest, the undefiled air, and the exhilaration of spirits experienced dur-

ing a sojourn among the glaciers and the mountain tops.

The mountain climber must be of abstemious habits, must have a clear head, steady nerves, and an alert eye. Truly a club hut is superior to the must luxurious caravansary at the sea level, and a rucksack on your back and a sprig of edelweiss in your hat are better than a bag full of golf sticks or rooting from a grandstand at a game of baseball played by other men. Contact, too, with the mountain guides, who are a sturdy race, rids one of mental cobwebs and tends to a more expanded intellectual horizon. They are a new kind of men, from whom much may be learned by the town dweller. The eminent English physicist, Tyndall, knew the value of mountain climbing, and doubtless the well balanced activities of his long and useful life were due in no small measure to his holidays in the *belles alpes*. His charming essays and scientific observations on the movements of glaciers and the geology and meteorology of the Alps are good literature for summer reading.

It is an excellent thing to cultivate a hobby, and it would be hard to find a saner or more healthful one than mountain climbing. It also has the merit of being less expensive than automobiles, yachts, or collecting paintings and bric-à-brac. It was a wise physician who discovered after the age of forty-five that he could do a year's work in ten months, but not in twelve. The vacation habit is a good one. "In the mountains ye shall find rest."

THE INFLUENCE OF RACIAL INCEST ON MENTAL DEVELOPMENT.

In an ably written chapter of White and Jellife's recent work on the treatment of mental diseases, Dr. William T. Salmon calls attention to the fact that nearly one third of the immigrants certified as insane or mentally defective at Ellis Island by the United States Public Health Service officers are Jews, though Hebrews constituted only fourteen per cent. of the total immigration. Here, then, is a fact that has an important bearing on the eugenic problem—that at present all absorbing topic. How is it that a race of people who through all the centuries that their neighbors were engaged in barbarous pursuits were cultivating their minds, now at this time, with everything about them influencing mental development, give evidence of a breaking down in the very faculty in which they shone? The fact that they have been practically a racially pure people, and not subject to the baneful influences of promiscuous mixtures or crossings, makes this all the more peculiar in the light of eugenic teachings.

Friedmann, in an article in the *Journal of the American Medical Association* for March 9, 1912, ascribes this eugenic paradox to the close imbreeding of these people within their own race, or racial incest or consanguinity. While crossings between different species produces hybridism, a condition so familiar to breeders, the other extreme, breeding exclusively in one variety or line, is just as harmful. In humans this seems to produce the highly sensitized organisms so prone to mental disorder and defect.

Aside from discouraging and preventing, where possible, matings between the unfit, and encouraging them between the highly developed, the eugenists should include in their propaganda, not merely marriages within the races, but intermarriages between the different divisions of the same races. The probability of acquiring, by such matings, some distinctly dominant characteristics not possessed by either, and wiping out any recessive characteristics, is consistent with the Mendelian doctrine. Mating in the same branch of a race can bring no new determiner to that branch; there is no opportunity for the exercise of "selective evolution." Recessive characteristics are retained, to be emphasized at some future time in the form of a distinct defect, as is shown to be the case with the Jews. But intermarriages between Jew and Gentile have produced remarkable specimens both mentally and physically. Even marriages between Jews of different nationalities have been better, showing that environment influences the physical characteristics of even the same race. On this principle, crossings between Anglo-Saxons and Latins, or Anglo-Saxons and Slavs, is better than continuous mating in the same branches. On the other hand, crossings between the different races, as between the Caucasian and negro, between Mongolian and Caucasian, etc., has a tendency, in man as well as animals, to produce hybridism or mongrelism.

The perfect man can come, therefore, from matings of the fittest, but between the branches of a race; from the highly developed alloyed with the cruder—else disintegration may result. Hence immigration, if properly sifted of the defective, is an advantage rather than a disadvantage. The only problem is the admittedly difficult one of detecting and excluding the undesirable, because unfit. And even when the unfit have apparently been excluded, the normal may have within them, according to the Mendelian doctrine, recessive characteristics which are inactive or inert for them, but which they can transmit to their offspring in whom they become the dominant characteristics; on the same principle that hemophilia is transmitted through the female, in whom it is dormant, to become active in her male offspring.

SPHYGMOMANOMETRY AND THE NEW-BORN INFANT.

That apparent absence of the heart beats at birth does not constitute positive proof of death of the infant is shown by the number of cases in which life has been permanently restored in spite of such a condition. It is generally conceded that the sole criterion of death under these circumstances is afforded by the results of artificial respiration. Only where, notwithstanding passive respiration for at least half an hour, distinct heart action fails to appear, can death be considered to have taken place.

An arbitrary rule of this kind, however, is obviously not the best possible solution of the problem. Some more sensitive method of ascertaining the persistence of cardiac activity than palpation and auscultation is desirable. Both the advisability and practicability of such a refinement in procedure have recently been shown by Balard, of Bordeaux (*Presse médicale*, March 29, 1913), who uses a sensitive dial sphygmomanometer, with a small, narrow cuff (six centimetres wide) to this end. In apparently dead infants, in whom neither the radial pulse nor the apex beat could be felt, and auscultation was likewise negative, brachial pulsations at a slow rate—fifty in two of the cases—were plainly revealed by the instrument. In at least one case of the four reported, artificial respiration would have been abandoned after half an hour's seemingly unsuccessful trial had it not been for the instrument, which showed that the circulation, though feeble, was being kept up. At the expiration of one hour the heart beats became noticeable upon inspection, and after two hours and a quarter, spontaneous respiration was established. The child later died; evidently by reason of injury received during an unsuccessful attempt at forceps extraction. In both this and the other cases, however, the superiority of the sphygmomanometric method of determining the presence of feeble heart action over the procedures heretofore employed seemed to be clearly demonstrated.

SUSCEPTIBILITY OF COCKROACHES TO PLAGUE BACILLI.

Among the many parasites which come in direct or indirect contact with man, the cockroaches have lately been made the subject of interesting experimentations, and thus, Dr. M. A. Barber has made experiments with sixty-one cockroaches, which were inoculated with a virulent strain of plague, as reported in the *Philippine Journal of Tropical Medicine* for December, 1912. In the culture of the sixty-one cockroaches it was shown that six only died from an unmixed plague infection, of which only one could be identified by guineapig infections. Of the noninfected insects, at least one half were living from twelve to twenty-seven days after inoculation. Since all which died of plague died from the plague strain, either alone or mixed with some other bacteria, within two hours after inoculation, it seems probable that those surviving six days were not infected. At least twenty-eight survived two weeks or more after inoculation. It appears, therefore, to have been clearly shown that cockroaches may be infected by large doses of virulent plague bacilli.

News Items.

Meetings of Medical Societies to be Held in Philadelphia During the Coming Week.—Tuesday, June 24th, West Philadelphia Medical Association; Friday, June 27th, Northern Medical Association and the South Branch of the County Medical Society.

Medical Society of the Woman's Hospital, Philadelphia.—At the May meeting of this society the following officers were elected to serve for the ensuing year: President, Dr. Catherine Macfarlane; vice-president, Dr. Margaret Butler; treasurer, Dr. Elizabeth F. C. Clark; secretary, Dr. Margaret R. Large.

Rhode Island Medical Society.—At the one hundred and first annual meeting of this society, held in Providence on Thursday, June 5th, Dr. John W. Keefe was elected president, to serve for the ensuing year. Other officers were elected as follows: Vice-presidents, Dr. Stephen A. Welch and Dr. Frank L. Day; secretary, Dr. Jay Perkins; treasurer, Dr. Winthrop A. Risk; librarian, Dr. George D. Hersey.

Resolution on the Danger of Unproved Serums.—At a meeting of the board of directors of the Philadelphia County Medical Society, held on June 9th, the following resolution was adopted:

Resolved, That it is the sense of the board of directors of the Philadelphia County Medical Society that it is prejudicial to the public health to inject into human beings living organisms before their harmlessness and therapeutic value have been ascertained by examination of the board of health.

Endowment Fund for a Chair of Pathology in the University of Cincinnati.—Mrs. Mary Emery has contributed $125,000 to the Ohio Miami Medical College of the University of Cincinnati for the endowment of a chair of pathology in the institution. A sum of about $80,000 from the estate of Dr. Francis Brunning has also been received by the university, the income of which is to be used for the endowment of a second chair.

Commencement Exercises of the Medico-Chirurgical College of Philadelphia.—Over one hundred graduates received degrees in the four departments of this college, at the thirty-third annual commencement, held on June 6th. Of this number, sixty-one were graduates in medicine. Dr. Edwin Earle Sparks, president of the Pennsylvania State College, delivered the address, and Dr. Seneca Egbert, dean of the medical department, presented the diplomas.

Alienists and Neurologists to Meet in Chicago.—A meeting of alienists and neurologists will be held in Chicago on June 23d, 24th, and 25th, under the auspices of the Chicago Medical Society, for the purpose of discussing mental diseases in their various phases. All who are interested are invited to attend. An excellent programme has been prepared, consisting of forty-four papers by men prominent in the field of neurology. Dr. Harold N. Moyer is chairman of the committee of arrangements, and Dr. W. T. Mefford is secretary.

The Clinical Society of Philadelphia Plans to Erect an Office Building.—On May 31st a charter was granted to the Clinical Society of Philadelphia, a new medical organization which is planning to erect a scientifically arranged office building for the exclusive use of physicians. The members of the society are: Dr. E. E. Montgomery, Dr. J. B. Deaver, Dr. Samuel G. Risley, Dr. G. Oram Ring, Dr. C. J. Decker, Dr. George W. Warren, Dr. George C. Stout, Dr. A. H. Maier, Dr. E. L. Klopp, Dr. H. R. Loux, Dr. W. C. Hollopeter, and Dr. Harvey A. Fenner.

New Officers of the Medical Society of New Jersey.—At the one hundred and forty-sixth annual meeting of this society, held in Spring Lake, on June 10th, 11th, and 12th, the following officers were elected: President, Dr. Enoch Hollingshead, of Pemberton; first vice-president, Dr. Frank D. Gray, of Jersey City; second vice-president, Dr. William J. Chandler, of South Orange; third vice-president, Dr. Philip Marvel, of Atlantic City; corresponding secretary, Dr. Harry A. Stout, of Wenonah, reelected; recording secretary, Dr. Thomas N. Gray, of East Orange, reelected; treasurer, Dr. Archibald Mercer, of Newark, reelected.

Changes in the Staff of Stanford University.—The following promotions and new appointments have been made in the medical department of Stanford University: Dr. Thomas Addis has been promoted to be associate professor of medicine; Dr. E. C. Dickson and Dr. W. W. Boardman have been made assistant professors of medicine; Dr. Leo Eloesser and Dr. F. E. Blaisdell have been made assistant professors of surgery. Dr. R. G. Brodrick, of the San Francisco Board of Health, has been appointed assistant clinical professor of hygiene and public health. In the division of medicine, Dr. W. F. Schaller has been made assistant clinical professor, assigned to neurology, and Dr. J. M. Wolfsohn, clinical instructor, assigned to neurology. Dr. A. A. O'Neill has been promoted to be a clinical instructor in medicine, and Dr. G. A. Rothganger has been appointed an instructor in surgery.

Massachusetts Medical Society.—The one hundred and thirty-second annual meeting of this society was held in Boston on June 10th and 11th. The attendance was unusually large and the meeting was in every respect very successful. The Shattuck Lecture, which is provided for by a special fund, was delivered by Dr. Harvey Cushing, of the Harvard Medical School, his subject being Diabetes Insipidus and the Polyurias of Hypophyseal Origin. The annual dinner of the society was held in the Copley-Plaza Hotel, on the evening of June 11th, and among the invited guests were: Dr. Walter F. Bowers, of Clinton; Professor Charles W. Eliot, Mr. Robert L. O'Brien, Dr. H. C. Ernst, Dr. H. D. Arnold, Dr. John J. Bottomley, Dr. E. H. Bradford, Dr. George B. Shattuck, Dr. F. C. Shattuck, Dr. F. W. Goss, Dr. E. H. Buckingham, Dr. J. C. White, Dr. Henry P. Walcott, Dr. George W. Gay, Dr. Charles F. Whittington, Dr. Welder Tileston, Doctor Burrage, Doctor Brigham and Doctor Calderwood, all of Boston; Dr. Charles G. Stockton, of Buffalo, N. Y.; Dr. John H. Gibbon, of Philadelphia; Dr. Homer Gage, of Worcester, and Doctor Cook, of Springfield. The council of the society at its annual meeting elected the following officers: President, Dr. Walter F. Bowers, of Clinton; vice-president, Dr. Lyman Asa Jones, of North Adams; secretary, Dr. Walter L. Burrage, of Boston; treasurer, Dr. Edward D. Buckingham, of Boston; librarian, Dr. Edward H. Brigham, of Boston; chairman of committee of arrangements, Dr. Arthur H. Broughton, of Jamaica Plain.

Venereal Diseases in New York City.—During the month of January, 1913, the Department of Health requested seven thousand physicians in Greater New York to furnish the department with information regarding the number of cases of syphilis, gonorrhea and chancroid that had been under their care in their private practice during the twelve months previous, in order that some idea of the number of cases of venereal disease treated during 1912 might be obtained. Only 2,215 physicians responded to this request, reporting 13,348 cases of syphilis, 24,980 cases of gonorrhea, and 4,431 cases of chancroid, making a total of 42,659 cases of venereal disease treated in the private practice of less than one-third of the physicians of this city within twelve months. The number of cases of syphilis is especially and alarmingly large. A complete census of the cases treated in institutions has been unobtainable up to the present time, but the institutional cases, without doubt, exceed in number many times those treated in private practice. The apparently extensive prevalence of venereal diseases in New York city certainly furnishes food for thought. During 1912 the serological laboratory of the Department of Health tested 4,585 specimens of blood for syphilis and 545 for gonorrhea, while from January 1, 1913, to June 1, 1913, 5,639 blood specimens were tested for syphilis and 846 for gonorrhoea. A diagnostic clinic for venereal diseases is held daily, between 9 and 10 a. m., at the central office of the Department of Health, Centre and Walker streets. Patients may be referred by physicians for the performance of the Wasserman reaction, and for examinations of fresh specimens or the presence of treponema. No patients are examined unless referred by physicians, and under no circumstances are the results of examinations reported to patients. A similar clinic is held at 307 West Thirty-third street, on Wednesday evenings between 8 and 9 p. m., for the benefit of applicants unable to attend during the day.

Personal.—Dr. J. Morris Slemons, associate professor of obstetrics of Johns Hopkins Hospital, has been appointed professor of gynecology in the University of California, and director of the new Women's Clinic at that institution. Dr. Slemons will assume his new duties on August 15th. Dr. Karl M. Wilson, of Montreal, will succeed Dr. Slemons at Johns Hopkins.

Dr. Guy L. Kiefer, who has held the position of health officer of Detroit since 1901, has tendered his resignation, to take effect July 1st. Dr. William H. Price, for twelve years head of the milk inspection department of the Detroit Board of Health, will succeed him.

Dr. P. J. H. Farrell, secretary of the Chicago Medical Society, has been endorsed by President Wilson for appointment as governor of the Philippine Islands.

Dr. Carlos F. MacDonald, of New York, was appointed president of the American Medicopsychological Association, at the sixty-ninth annual meeting of the association, held last week in Niagara Falls, Canada.

Gifts and Bequests to Hospitals.—By the will of Hannah M. Rockwell, who died in Brooklyn last year, the Methodist Episcopal Hospital will receive $5,000.

St. John's Hospital, Brooklyn, will receive $1,000, under the terms of the will of John E. Brone, who died in 1910.

By the will of Miss Maud D. Smith, the Syracuse Hospital for Women will receive $10,000, to endow a room in the hospital.

Included in the will of the late Hunter Brooke, of Philadelphia, the Episcopal Hospital will receive $5,000, and the Philadelphia Home for Incurables and the Kensington Hospital for Women will each receive $1,000.

By the will of Theodore Goetze, who died on May 9th, the German Hospital and Dispensary, New York, and the Seton Hospital for Consumptives will each receive $8,000, and St. Joseph's Hospital for Consumptives, $6,000.

The will of Henry B. Palethrop, late of Philadelphia, contained bequests of $5,000 each to the Presbyterian, the Jewish, Wills, and the Pennsylvania Hospitals.

By the will of W. Burling Cocks, late of Locust Valley, Long Island, the Nassau Hospital will receive $5,000.

Resolutions on the Death of Dr. James A. Egan.—At a special meeting of the Illinois State Board of Health, held in Chicago, June 7, 1913, the following resolutions relating to the death of Dr. James A. Egan were adopted:

WHEREAS, Dr. James A. Egan, who departed this life on March 30, 1913, was a member of the State Board of Health of Illinois and its secretary continuously for upward of sixteen years, the following resolutions are hereby adopted:

Resolved, That in the death of Doctor Egan the State has lost its foremost advocate of disease prevention, of sanitary education and legislation, of higher medical education, and of reciprocity between the States in medical practice;

Resolved, That the monthly bulletin inaugurated by Doctor Egan—a pioneer in its field—contained articles of unrivalled excellence upon the prevention of disease, the care of children, the care of the sick and other topics, which were almost wholly the product of his pen and were nation wide in their beneficial influence;

Resolved, That the vigilant zeal of Doctor Egan in his official capacity in eliminating epidemics by vaccination and the introduction of free antitoxine for the cure of diphtheria, in the instruction of undertakers and the regulation of the burial of the dead, in the instruction and regulation of the practice of midwives, and other means, has made human life in the State of Illinois more secure;

Resolved, That the labor of Doctor Egan in making life more secure has increased the population, increased human efficiency, has added to the value of the products of both farm and factory and has been an important factor in the education of the people;

Resolved, That the work of Doctor Egan in the strictness and broadening of the examinations for medical licensure and his relentless enforcement of the inadequate laws against fraudulent and incompetent practitioners of medicine, has placed medical education, medical science, and medical practice upon a more exalted plane than heretofore;

Resolved, That the incessant work of Doctor Egan, and the absence of relaxing vacations have contributed to his untimely demise;

Resolved, That the undersigned members of the board mourn the loss of an untiring fellow worker and a much loved comrade and friend;

Resolved, That these resolutions be spread upon the minutes of the board and that a copy be sent to each of the surviving children.

GEORGE W. WEBSTER, M. D., President.
C. J. BOSWELL, M. D.
RALPH E. NIEDRINGHAUS, M. D.
WALTER R. SCHUSSLER, M. D.
P. H. WESSEL, M. D.
HENRY RICHINGS, M. D.

Attest:
AMOS SAWYER,
Acting Secretary.

The University of Minnesota, Minneapolis, Minn.

The American Medical Association,

Sixty-fourth Annual Meeting,

MINNEAPOLIS, JUNE 16 TO JUNE 20, 1912.

Introduction.

Visitors to Minneapolis found a city in which business and beauty are well blended together. Sixty years ago Minneapolis was an Indian reservation. To-day it is a city of more than 325,000 inhabitants. With its twin city, St. Paul, it forms a community with a population exceeding half a million. Minneapolis, meaning "City of Water," is well named because there are eight large lakes, besides the Mississippi River, within the city limits. Naturally, in the summertime it is a city of beauty. The famous lakes—Lake of the Isles, Lake Calhoun, and Lake Harriett—with their wooded shores and fine boulevards have been so beautified by the Minneapolis Park Board as to confer upon them the rare distinction of having no peers in any other city in the world. These lakes are easily reached by trolley. Other points of natural beauty are Minnehaha Falls, made famous by Longfellow, and Lake Minnetonka, a picturesque lake, twenty-six miles long, which is reached by less than an hour's trolley ride from Minneapolis. Here many of the wealthy citizens have built luxurious summer homes. There is a magnificent boulevard winding from the lakes along Minnehaha Creek to the famous Minnehaha Falls, and thence along the gorge of the Mississippi to the grounds of the State University.

Minneapolis to-day presents to visitors a most prosperous and attractive appearance. Flower boxes embellish a large number of business buildings and ornamental light standards adorn the downtown streets. Collectively, these are known as the "Hanging Gardens of Minneapolis." The City Court House is the most notable public building. It occupies an entire block, is built of Minnesota granite, and cost $3,500,000. It is surmounted by a tower which offers a fine view of the city from a height of 345 feet. Within its front entrance is a heroic figure, the "River God" or "Father of Waters," said to have been carved from the largest piece of marble ever taken from the Carrara quarries. The new Art Museum now under construction was made possible by the donation of a block of land, valued at $250,000, by the late Clinton Morrison and by the generous subscription of half a million dollars in one hour's time at a dinner at the Minneapolis Club, at which 225 citizens subscribed. The Walker Art Gallery is a private collection of famous oil paintings, as well as valuable pottery, ivories, etc. It is located in the heart of the city and is free to the public. Of course, visitors to the city should not neglect to see the largest flour mills in the world, for Minneapolis ranks first in the output of flour, having a daily capacity of 84,000 barrels.

For years the subject of pure drinking water for Minneapolis was a great problem before its citizens. About two years ago the construction of a great filtration plant was begun, and since the first of this year the dream of generations has been realized. Minneapolis now has water that is pure and palatable. The cost of purifying a million gallons is $4. The capacity of the clear water basin is about 45,000,000 gallons, it being the largest enclosed basin in the country.

The American Medical Association met in the University of Minnesota campus. The business of the various sections was transacted in the new and modernly equipped medical building. The campus covers eighty-five acres bordering on the east bank of the Mississippi River. Of special interest to the medical profession, outside of their meetings, was the inspection of the Elliot Memorial Hospital, the

Free Dispensary, Institute of Pathology and Bacteriology, and the College of Pharmacy Drug Plant Laboratory and its Garden. The Elliot Memorial Hospital, which is under the direct supervision of the medical department of the university, was erected principally by the gifts of $120,000 from the estate of Dr. and Mrs. A. F. Elliot and of about $50,000 by local physicians. A new era in medical education was begun with the development of this teaching hospital, the practical laboratory of clinical medicine. The building is fireproof and consists of four stories and basement. It has a capacity of 120 beds. Sick poor residing in Minnesota are admitted free of charge. No paying patients are received. Dr. L. B. Baldwin is the superintendent. The Free Dispensary is the outpatient department of the hospital. The total number of patients treated at the dispensary in the year 1912 was 33,190; 13,513 prescriptions were dispensed by the pharmacy students. The dispensary extends its usefulness to the homes of the needy families. Valuable clinical practice is given to the medical students, both at the in and out patient departments of the hospital. The Pasteur Institute of Minnesota is located in the Pathology Building. It was opened August 1, 1907. During the last year 318 patients were treated with inoculations against rabies. The last legislature passed a law requiring all dogs in suspected localities to be muzzled for six months. This law, it is hoped, will reduce the large number of patients needing the Pasteur treatment.

Section of the Medicinal Plant Garden looking northward, showing hedge of *Rhamnus cathartica* and ricinus.

The Medicinal Plant Garden was authorized by the Regents in 1909, and since that time the garden has gained a national reputation. There is probably not another such extensive garden devoted exclusively to medicinal plants in this country. The garden was established to increase the facilities for and make more comprehensive the instruction of pharmacognosy and materia medica. It furnishes good material for expert and research work. The proper development of such a garden gives the student an excellent idea of the origin of vegetable drugs, and he is thereby impressed with the distinguishing characters of the various families. In the selection of the seeds for the garden many parts of the world were called upon. No doubt many physicians were greatly interested in visiting this garden and seeing for themselves the living plants of *Digitalis purpurea, Hyoscyamus niger, Atropa belladonna,* and various other drugs which are frequently prescribed.

Section of the Medicinal Plant Garden looking eastward, showing: 1, *Delphinium consolida;* 2, *Digitalis purpurea rosea;* 3, *Atropa belladonna;* 4, *Datura metelloides;* 5, *Aconitum speciale;* 6, *Gossypium herbaceum;* 7, *Calendula officinalis;* 8, Slat House within which are shade loving plants.

The Twin Cities (Minneapolis and St. Paul), with their fifty-seven hospitals, both private and public, and their large number of physicians of national reputation, afford the best clinics in the Northwest. Among the hospitals, the City and County Hospital of St. Paul is the largest, with a capacity of 600 beds. It is in charge of Dr. A. B. Auker. The next in size is the City Hospital of Minneapolis, in connection with which is the Hopewell Hospital for tuberculous patients. Together they have a capacity of 410 beds and are in charge of Dr. H. O. Collins. Other

notable hospitals in the city of Minneapolis are:

Abbott's Hospital, both public and private, thirty beds.

Asbury Methodist Deaconess Hospital, 103 beds.

Bethany Home, public, for women and children, seventy-six beds.

Christian Tent Hospital, private, for tuberculous patients, fifteen beds.

Cody Hospital, private, maternity, twelve beds.

Florence Crittenden Home, private, fifteen beds.

Eitel Hospital, private, twenty-six beds.

Hill Crest Surgical Hospital, private (also obstetrical), forty beds.

Home for Children and Aged Women, private, 120 beds.

Home for the Aged, private, 130 beds; Little Sisters of the Poor in charge.

Maternity Hospital, public, fifty beds.

Minneapolis Roman Catholic Orphan Asylum, private, for boys, 150 beds.

Minneapolis Sanitarium, public, for noncontagious diseases, twenty beds.

Northwestern Hospital, public, 100 beds.

Norwegian Lutheran Deaconess Home, public, eighty-five beds.

Mahala Fisk Pillsbury Home, for girls, sixty-four beds.

Quarantine Hospital, 100 beds.

Rest Hospital, private, twenty-five beds.

Sheltering Arm Orphan Home, seventy beds.

South Side Sanatorium, private, twenty beds.

St. Barnabas Hospital, private and public, 150 beds.

St. Mary's Hospital, public, 100 beds.

Swedish Hospital, public, 150 beds.

Thomas Hospital, private, for tuberculous patients, fifty beds.

Washburn Memorial Orphan Asylum, private, 120 beds.

NOTABLE ST. PAUL HOSPITALS.

Bethesda Hospital, public, 130 beds.

City and County Hospital, 600 beds.

Cobb Hospital, private, eighteen beds.

Dale Street Infirmary, public, fifty beds.

House of the Good Shepherd, private, reformatory.

Jewish Home for the Aged, private, twenty beds.

Luther Hospital, private, fifty beds.

Mounds Pard Sanitarium, private, for nervous and mental cases, eighty beds.

Nugent Sanatorium, private, fifty beds.

Protestant Orphan Asylum, private, fifty beds.

Salvation Army Rescue Home, public, thirty-seven beds.

St. Joseph's Hospital, private, 130 beds.

St. Luke's Hospital, private, 100 beds.

St. Paul Roman Catholic Orphan Asylum, private, seventy-five beds.

St. Paul German Hospital, public, twenty-five beds.

St. Thomas Hospital.

Women's Christian Home, semipublic, maternity, twenty-five beds.

ABRAHAM JACOBI, M. D., LL. D.,
President of American Medical Association.

At Rochester, Minn., is St. Mary's Hospital, which is under the supervision of the famous Doctors Mayo. This hospital is for surgical cases only, and has a capacity of 250 beds.

There are about 560 physicians in Minneapolis and nearly all of them are members of the Hennepin County Medical Society. Meetings of this society are held on the first Monday of each month in the society's library rooms, located in the Donaldson Building. The programme usually consists of two or three papers and the presentation of clinical cases and reports of cases. The library is quite complete, containing about 4,700 volumes. The society subscribes for thirty-eight medical journals, domestic and foreign, and is receiving 100 journals by donation. There is also a special study course open to the members. The society at the present time is in a most flourishing condition and is the largest society of its kind in the Northwest. The St. Paul physicians, numbering in all 303, have a similar organization known as the Ramsey County Medical Society. This society publishes monthly the *St. Paul Medical Journal.*

The health of Minneapolis is exceptionally good. Its general death rate is about ten per one thousand population, the lowest of any city. The State Sanatorium for Tuberculosis was opened in 1907 at Walker, Minn. The last legislature made an appropriation of $200,000 for the purpose of enlarging the institution from a capacity of 100 to 150 beds, and increasing its equipment generally. Half a million dollars were also appropriated to aid counties in building and maintaining county sanatoriums. These splendid appropriations place Minne-

sota in line with such progressive States as New York, Massachusetts, Pennsylvania, and New Jersey. The county sanatoriums, because of their ease of access, will be used for the advanced cases, and the State sanatorium will care for the incipient cases. Altogether the outlook in Minnesota for the proper handling of tuberculosis is very hopeful.

We acknowledge thanks to the Albertype Company, of Brooklyn, for the use of some of the photographs.

The Headquarters and Meeting Places: The tracks of the Northern Pacific Railroad divide the Campus into two parts, the old and the new.

Old Campus.—Bureau of Registration, Bureau of Information, Post Office and Commercial Exhibit—Armory. Surgery—Library, Chapel. Ophthalmology—Law School, Room 106. Laryngology, Otology, and Rhinology—Shevlin Hall, Assembly Room. Disease of Children—Physics Building, Lecture Room. Stomatology—College of Dentistry, Room 308. Nervous and Mental Diseases—Folwell Hall, Room 311. Dermatology—Folwell Hall, Room 214. Genitourinary Diseases—Folwell Hall, Room 301. Hospitals—Chemistry Building, Amphitheatre.

New Campus.—House of Delegates—Engineering Building, Library. Practice of Medicine—Engineering Building, Auditorium, Room 305. Obstetrics, Gynecology, and Abdominal Surgery—Institute of Anatomy, Amphitheatre, Room 102. Pharmacology and Therapeutics—Millard Hall, Room 214. Pathology and Physiology—Institute of Anatomy, Room 104. Preventive Medicine and Public Health—Millard Hall, Room 128. Orthopedic Surgery—Engineering Building, Room 106. Scientific Exhibit—Institute of Anatomy.

JOHN A. WITHERSPOON, M. D.,
President of the American Medical Association, 1913-1914.

The House of Delegates.

MONDAY, JUNE 16TH.

About 800 members had registered when the House of Delegates was called to order by the president, Dr. Abraham Jacobi, of New York. Dr. Morgan Smith, of the Committee on Credentials, reported thirty-nine members present and asked to be permitted to submit a further report later. To dispense with the tedious roll call, as was the custom, papers were distributed, which were signed by the members, collected, and then returned to Doctor Smith. The members of the House of Delegates were the following:

STATE DELEGATES.

Alabama—3. W. H. Sanders, Montgomery. Seale Harris, Mobile. E. D. Bondurant, Mobile.

Arizona—1. John E. Bacon.

Arkansas—2. Morgan Smith, Little Rock.

California—3. George D. Kress, Los Angeles. George A. Hare, Fresno. V. G. Vecki, San Francisco.

Canal Zone—1. W. C. Gorgas, Ancon.

Colorado—2. Hubert Work, Pueblo. W. A. Jayne, Denver.

Connecticut—2. E. J. McKnight, Hartford. D. Chester Brown, Danbury.

Delaware—1. Henry J. Stubbs, Wilmington.

District of Columbia—1. G. Wythe Cook, Washington.

Florida—1. Joseph Y. Porter, Key West.

Georgia—3. T. J. Charlton, Savannah.

Hawaii—1.

Idaho—1. J. N. Alley, Fort Lapwai.

Illinois—9. A. L. Brittin, Athens. A. C. Cotton, Chicago. W. J. Noble, Chicago. J. T. Montgomery, Charleston. E. W. Fiegenbaum, Edwardsville. A. M. Harvey, Chicago. A. M. Corwin, Chicago. J. A. Kort, Chicago.

Indiana—4. J. Rilus Eastman, Indianapolis. Edwin Walker, Evansville. F. B. Wynn, Indianapolis. C. S. Bond, Richmond.

Iowa—3. L. W. Littig, Davenport. N. M. Voldeng, Cherokee. J. C. Rockafellow, Des Moines.

Kansas—2. J. T. Axtell, Newton. George M. Gray, Kansas City.

Kentucky—4. W. W. Richmond, Clinton. J. W. Ellis, Masonville. J. W. Kincaid, Catlettsburg. A. T. McCormack, Bowling Green.

Louisiana—2. Charles Chassaignar, New Orleans. Oscar Dowling, Shreveport.

Maine—1. E. H. Bennett, Lubec.

Maryland—2. G. Lane Taneyhill, Baltimore. R. B. Warfield, Baltimore.

Massachusetts—5. H. D. Arnold, Boston. H. G. Stetson, Greenfield. H. W. Van Allen, Springfield. Hugh Cabot, Boston. C. P. Hooker, Springfield.

Michigan—4. E. T. Abrams, Dollar Bay. F. C. Warnshuis, Grand Rapids. Louis J. Hirschman, Detroit. C. E. Boys, Kalamazoo.

Minnesota—2. R. C. Dugan, Eyota. Thomas McDavitt, St. Paul.

Mississippi—2. D. J. Williams, Gulfport. S. W. Glass, Lyon.

Missouri—5. C. R. Woodson, St. Joseph. A. W. McAlester, Jr., Kansas City. H. L. Reid, Charleston. R. M. Funkhoew, St. Louis. E. J. Goodwin, St. Louis.

Montana—1. Donald Campbell, Butte.

New York—11. William D. Johnson, Batavia. Grant C. Madill, Ogdensburg. Dwight H. Murray, Syracuse. Wendell C. Phillips, New York City. James P. Warbasse, Brooklyn. H. L. Elsner, Syracuse. F. M. Crandall, New York. E. A. Vander Veer, Albany. John C. Marertt, Brooklyn. S. W. S. Toms, Nyack. John O. Totak, Brooklyn.

North Carolina—2. J. Howell Way, Waynesville. H. A. Royster, Raleigh.

Nebraska—2. A. D. Nesbitt, Tekamah. A. R. Mitchell, Lincoln.

Nevada—1. Benjamin F. Cunningham, Reno.

New Hampshire—1. John Z. Shedd, North Conway.

New Jersey—3. William S. Lalor, Trenton. C. R. P. Fisher, Bound Brook. Luther M. Halsey, Williamstown.

New Mexico—1. S. D. Swope, Deming.

Ohio—6. C. L. Bonifield, Cincinnati. W. J. Means, Columbus. August Rhu, Marion. H. C. Haning, Dayton. B. R. McClellan, Xenia. J. H. J. Upham, Columbus.

Oklahoma—2. J. H. White, Muskogee. E. S. Lain, Oklahoma.

Oregon—1. K. A. J. MacKenzie, Portland.

Pennsylvania—9. George W. Guthrie, Wilkes-Barre. Theodore B. Appel, Lancaster. John B.

Spirit Knob, Lake Minnetonka.

Lowman, Johnstown. M. Howard Fussell, Philadelphia. Luther B. Kline, Catawissa. Thomas D. Davis, Pittsburgh. W. Rowland Davies, Scranton. William T. Hamilton, Philadelphia. John B. McAlister, Harrisburg.

Philippine Islands—1.

Rhode Island—1. John Champlin, Westerly.

South Carolina—1. E. A. Hines, Seneca.

South Dakota—1. W. R. Ball, Mitchell.

Tennessee—2. A. B. Cooke, Nashville. S. M. Miller, Knoxville.

Texas—5. W. D. Russ, San Antonio. H. Taylor, Fort Worth. C. A. Smith, Texarkana. C. Johnson, Fort Worth.

Utah—1. S. G. Kahn, Salt Lake City.

Vermont—1. J. N. Jenne, Burlington.

Virginia—3. William E. Anderson, Farmville. John S. Davis, University. J. S. Horsley, Richmond.

Washington—2. J. E. Else, Pullman. L. L. Love, Tacoma.

West Virginia—1. P. A. Haley, Charleston.

Wisconsin—3. J. J. McGovern, Milwaukee. J. F. Pember, Janesville. Rock Sleyster, Waupun.

Wyoming—1. M. A. Newell, Sheridan.

SECTION DELEGATES.

Practice of Medicine—Joseph A. Capp, Chicago.

Surgery—W. LeMoyne Willis, Los Angeles.

Obstetrics, Gynecology, and Abdominal Surgery—Thomas S. Cullen, Baltimore.

Ophthalmology—Thomas A. Woodruff, Chicago.

Laryngology, Otology, and Rhinology—Chevalier Jackson, Pittsburgh.

Diseases of Children—Charles Douglas, Detroit.

Pharmacology and Therapeutics—Torald Sollmann, Cleveland.

Pathology and Physiology—Yandell Henderson, New Haven, Conn.

Stomatology—G. V. I. Brown, Milwaukee, Wis.

Nervous and Mental Diseases—E. B. Angell, Rochester, N. Y.

Dermatology—Frank C. Knowles, Philadelphia.

Preventive Medicine and Public Health—M. P. Ravenel, Madison, Wis.

Hospitals—Fred A. Washburn, Boston.

DELEGATES FROM GOVERNMENT SERVICES.

United States Army—1. G. H. Torney.

United States Navy—1.

United States Public Health Service—1. John W. Kerr.

The reading of the minutes of last year was dispensed with, as copies of the minutes were to be found in the handbook.

President's Address. President Jacobi, in his address of welcome, remarked that as the president was not expected to speak on scientific subjects, he would confine his remarks to some ideas he wished to bring before the delegates. He therefore would suggest that in the section meetings the papers read should be more brief, so that more time might be allowed for discussion; furthermore, that the subjects should be announced more in advance, so that any one might prepare short papers on them. He feared that his influence with the association had been very insignificant, as the Constitution limited him to a very few duties only; thus, he had been obliged to ask for invitations to be present at several of the meetings of the Council. He would like to have an opportunity to come in closer contact with the members of the association and speak to them personally. There were upward of seventy thousand members of this association, and ninety per cent. of these were absent. He therefore felt like addressing the absentees in some such way as this: "Why are you absent from this opportunity to meet your brethren? Your indifference might tempt the delegates to think little of their office." Many letters had come to him expressing dissatis-

Wayzatta Drive, Lake Minnetonka.

Institute of Anatomy, University of Minnesota.

faction with the way the House of Delegates conducted its business. The writers seemed to forget that this meeting was principally a scientific one. He believed, however, that the House of Delegates should convene at least three days before the regular convention, so that the delegates would not be so rushed to finish their work and to be ready to attend the scientific meetings. Many declined to become members of the House of Delegates because they wanted to give their services to the work of the sections. But he had found that many of the writers who had complained were not members of the association, or even citizens of this country. If these men would pray less and watch more, if they would make their influence felt in their local societies, county and State, there would be less cause for complaint of the autocracy of the House of Delegates. Doctor Jacobi then read a letter from the American Institute of Homeopathy, asking that the American Medical Association appoint a committee of five to meet a committee of five from their own association for the purpose of selecting and studying a number of drugs in some laboratory, and later to apply these drugs for practical purposes in some hospital, with the idea of proving or disproving their theory of the action of similars.

Report of the Secretary. Dr. Alexander N. Craig reported on membership: "The membership of the American Medical Association on May 1, 1912, was 34,283. During the past year, 303 members have died, 1,179 have resigned, 405 have been dropped as not eligible, 521 have been dropped for nonpayment of dues, and 13 have been removed from the rolls on account of being reported "not found," making a total of 2,421 names to be deducted from the membership list. There have been added 6,051 names to the membership roll, of which 4,605 were transferred from the subscription list. The membership of the American Medical Association on May 1, 1913, was 37,913, a net increase for the year of 3,630. As is readily seen, this gain in members is due largely to circularizing subscribers to the *Journal of the American Medical Association* who were eligible, urging them to become members. While it is gratifying to report so large an addition at this meeting, it should be remembered that this increase under normal conditions would have been distributed throughout the years during which the questions of postage on journals mailed to members was unsettled."

Treasurer's Report. Dr. W. A. Pusey reported:

ASSOCIATION ACCOUNT

Receipts

December 30, 1911—Balance—		
Bonds per schedule...	$40,000.00	
Certificates of deposit..	60,000.00	
Checking account.....	1,536.57	
		$101,536.57
1912—		
February 8—Surplus transferred from current account		30,000.00
March 8—Interest on deposit certificate		002.50
April 1—Bond interest.....		400.00
July 1—Bond interest.....		400.00
August 28—Interest on deposit certificate		035.00
October 1—Bond interest....		400.00
December 31—Interest on bank balances		51.37
December 31—Bond interest.		400.00
		$135,025.44
1913—		
January 2—Balance—		
Bonds per schedule...	$40,000.00	
Certificates of deposit..	90,000.00	
Checking account	5,025.44	
		$135,025.44

Davis Memorial Fund

1912—		
November 1—Cash in Northern Trust Co. Savings Bank received from former treasurer, Dr. Frank Billings...	$3,475.68	
December 31—Interest.....	48.75	
		3,524.43
November 8—To Cash—Art Bronze Foundry		225.00
December 31—Balance.....		$3,299.43

The meeting then adjourned temporarily out of respect for the memory of the late Dr. C. A. Dougherty.

After the reassembling of the members, Doctor

Institute of Pathology and Bacteriology, University of Minnesota.

Library, University of Minnesota.

Wynn reported excellent facilities regarding the scientific exhibit in the University Armory. Great credit, he said, was due to Dr. T. G. Lee. The anatomical and physiological departments were better represented than ever before by macroscopic and microscopic material. Special emphasis had been laid on cancer, infectious diseases, new methods of anesthesia, x ray work, especially of the gastrointestinal tract, and matters pertaining to pure milk and satisfactory water supplies; and formal demonstrations would be given at stated hours.

Meeting adjourned.

TUESDAY, JUNE 17TH.

Dr. John A. Witherspoon took the chair, and the roll was called.

Reports of Committees. Dr. J. B. Murphy, chairman of the Committee on National Department of Health, reported that the chief work accomplished by this committee had been the insertion of a health plank in the platform of each political party during the recent national election. But neither the establishment of a committee on public health in the House of Representatives, nor of a federal department of health, had as yet been accomplished. Congress had not taken any action, and thus the Owen bill had died. There was urgent need, however, that the scattered federal health services should be so coordinated that throughout the country the best results as to sanitation and the public health might be accomplished. The Board of Trustees had failed to make sufficient appropriations for promoting this desirable end. The committee recommended that a deputation should be appointed to put the facts before Congress on behalf of the association and all other health organizations of the country. The House of Delegates should also again strongly endorse the creation of a federal department of health, and instruct its officers to use their best endeavors to bring about the establishment of such a department. Doctor Murphy thought it would be a good idea for this association to send committees of its members to every important health conference in the United States, such as the annual meeting of the American Public Health Association (including the homeopathic national body), and the various State and interstate medical societies, and also such other organizations as the National Federation of Women's Clubs, to urge them all to unite in securing and supporting a federal department of health. The idea was prevalent throughout the country that such a department would be controlled by the American Medical Association, and it was therefore our duty to contradict such rumors in the strongest possible language. But to accomplish anything the House of Delegates should provide sufficient funds for the Committee on National Department of Health, and give it sufficient liberty to act on its own initiative. If this could not be done it would be better to discontinue the committee. "Let us," he said, "either withdraw our support or compel greater activity."

The chairman of the *Reference Committee on Amendments to the Constitution and By-laws* then made his report. A recommendation to add to section one of Chapter One of by-laws, "and officers of the army and navy" was lost. An amendment providing that a member of the American Medical Association having resigned from a local medical society should cease to be a member of the American Medical Association after one year and a half unless he had in the meantime joined another local society, was lost.

The Reference Committee on Reports of Officers recommended, in accordance with Doctor Jacobi's suggestion, that the secretaries of the first five scientific sections be elected for three years instead of one; those of the next five sections, for two years, and after that time, for three years; and those of the next five sections, for one year, and after that, for three years. It was proposed that next year the meetings of the main body should be held in the evening. This was amended so that the meetings of the main body should be held on Monday and Tuesday evenings of the convention week, while the scientific sections should postpone their meetings until Wednesday. The secretary was requested to invite the president to all meetings of the council.

Fee Splitting Condemned.—A resolution to the effect that all secret fee splitting among the mem-

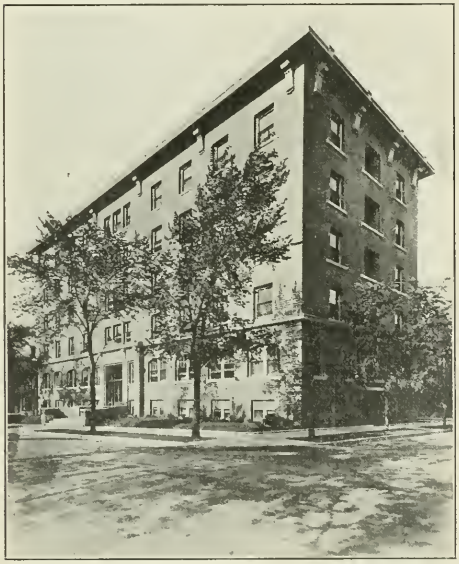
Laboratories, Department of Medicine, University of Minnesota.

bers of the association should be punished by expulsion was adopted.

The *Reference Committee on Sections and Section Work* recommended the establishment of a section in gastroenterology and proctology, and that the number of papers read in each section should not exceed fifteen.

The *Judicial Council* recommended that the secretary of the House of Delegates should acknowledge the receipt of the letter from the American Institute of Homeopathy, and in this reply state that the American Medical Association would consider any scientific proposition which the institute might submit over the signature of the committee in charge.

Doctor Cullen, of Baltimore, reported that good work had been done by the society for the Diagnosis, Treatment, and Prevention of Cancer, and



Eitel Hospital, Minneapolis.

requested the acceptance of his report, with the approval of the house.

Doctor Dowling, of Louisiana, suggested the establishment of a hygienic car to be sent throughout the United States for the education of the public on questions of public health.

Meeting adjourned.

WEDNESDAY, JUNE 18TH.

Report of Committee on Credentials. The House of Delegates entered into a committee of the whole to consider a resolution that an amendment be made to Chapter Four, section five, of by-laws, providing for a presiding officer of the House of Delegates, as speaker, to be elected for a term of twelve months.

Histology Building, University of Minnesota.

In favor of this amendment, Dr. Dwight H. Murray, of Syracuse, New York, chairman of the committee, said that the president of the American Medical Association was not always a parliamentarian, as had been shown many times in the past. The president was elected for scientific attainments rather than his parliamentary knowledge. When the president was not a parliamentarian, and in touch with all the current maters before the House of Delegates, the situation became a very difficult one for him, and many mistakes were likely to occur. If we always had a president like the one in the chair to-day such an amendment would not become necessary. It would be an excellent thing if the House of Delegates could always elect from its members a presiding officer who would be in touch with its business concerns. Another cause for criticism was the fact that the president took his seat in the middle of the session, while it would be much better if he should enter upon his official functions at the opening of the House of Delegates. In view of this condition of affairs, a speaker should therefore be elected at its first meeting. At present the president had to find out what had been going on in the

St. Barnabas Hospital, Minneapolis.

City and County Hospital of St. Paul.

previous meetings. The House of Delegates had among its members many men who were able parliamentarians, fair and judicious. The activity of such a man would probably last more than one year unless he was found wanting in some particular. The British Medical Association had deemed it wise to have such a presiding officer.

Dr. A. M. Corwin, of Chicago, Ill., remarked that the chairman had made a very clean statement of the situation, and he felt confident that Doctor Murray's sole purpose was to promote the efficiency of the House of Delegates as a legislative body. Personally, he thought that matters as they stood at present could be improved, but he did not believe it was necessary to create the new office of speaker. The president was elected as a scientific man who had character, and such a gentleman was now in the chair. Doctor Corwin stated that he had been a member of the House of Delegates for years, and had never known a time when one of its members could complain of the parliamentary ignorance or unfairness of the president. In the Cook County Medical Society the president elect gave no time to scientific matters, devoting his attention to becoming acquainted with the business of the society; but after he had actually become president, gave himself

Northwestern Hospital, Minneapolis.

up entirely to the promotion of its scientific interests. This plan had worked well, and he would therefore suggest that a similar arrangement be adopted in the House of Delegates.

Dr. H. D. Arnold, of Boston, Mass., said he could see that such an arrangement as spoken of by Doctor Corwin would work out very well in a county society, where several meetings were held during the year; but he did not think it would be practicable in an organization like this, with only one meeting a year.

Dr. C. R. Woodson, of St. Joseph, Mo., said that from his observation of political matters all over the United States, he was afraid that if we had a real parliamentary chairman matters would be delayed more than ever. He had complete confidence in all the men that this body would ever elect president.

Dr. Wendell C. Phillips, of New York city, observed that the members of the American Medical Association were busy men in their home towns. The question of time was therefore an important one in the work that had to be done at its annual meeting. He was convinced that men who

Elliott Memorial Hospital, University of Minnesota.

were familiar with the workings and usages of this organization could greatly expedite its business.

Dr. J. R. Winslow, of Baltimore, Md., said that, from his observation of medical meetings, he believed that if the Constitution, and also most of the officers, could be gotten rid of, a great deal more work could be accomplished.

Dr. Hubert Work, of Pueblo, Colo., remarked that he had been a member of the House of Delegates for seven years and had noticed that practically the secretary was generally the presiding officer of the meetings.

Dr. George W. Guthrie, of Wilkesbarre, Pa., asked how we could know that our presiding officer was going to be a good parliamentarian until we have tried him. All that we could do was use the utmost discretion in electing the president, one of the few prerogatives of whom was to preside over the meetings of the House of Delegates.

Dr. E. T. Abrams, of Dollar Bay, Mich., moved that the committee of the whole rise and the regular session be resumed; which motion was seconded and carried.

The minutes of the last meeting were read and were approved with the correction that the report of the Committee on National Department of

Health be entered as a minority report, as only four of the nine members had signed the report. These four were Dr. J. B. Murphy, of Chicago, chairman; Dr. W. C. Woodward, of Washington, D. C., secretary; Dr. J. N. Hurty, of Indianapolis, and Dr. W. A. Evans, of Chicago.

Reference Committee on Legislative and Political Action.—Dr. E. J. Goodwin, of St. Louis, Mo., gave a review of the history of the Special Committee on National Department of Health. He said that the committee's criticism in regard to lack of funds was unwarranted, as the committee had asked for an appropriation of $800, and had actually received $1,000, while all the bills that had been presented had been paid. The committee agreed that the fault lay in trying to establish a National Department of Health without the proper material for the purpose. The committee on such a department had always been timid and without the capacity and aggressiveness necessary to carry on the fight in which it was engaged. At this point it was moved and carried that the House of Delegates go into executive session, and all but members were requested to leave.

The report of the *Reference Committee on Legislative and Political Action* was finally adopted.

Dr. A. B. Cooke, of Nashville, Tenn., introduced a resolution to the effect that nothing in the section on the removal of members from one part of the country to another be construed as exempting any members of the American Medical Association from complying with the civil law of the State in which he resided.

Meeting adjourned.

(*To be continued.*)

American Medical Editors' Association. The annual meeting of this association was held at Minneapolis, Monday, June 16th, at Hotel Radisson, which was largely attended

On account of only a day session, the literary programme had been somewhat curtailed. A symposium upon Medical Journalism, Past, Present, and Future, was presented by the following editors:

Medical Journalism of the Past, by Dr. F. T. Haneman, *New York Medical Journal.*

Medical Journalism of the Present, by Dr. C. F. Taylor, *Medical World.*

Medical Journalism of the Future, by Dr. H. Edwin Lewis, *American Medicine.*

Upon the programme were:

President's Address, Dr. Thomas L. Stedman, *Medical Record.*

Suggestions as to the Preparation of Manuscript from the Readers as well as from the Journalistic Standpoint, by Dr. J. Madison Taylor, *Monthly Cyclopedia of Practical Medicine.*

Some Ways in Which this Society Can Exert Influence, by Dr. John L. Moffat, *Journal of Ophthalmology and Laryngology.*

The Best Way of Meeting the Demands of the Requirements of the Medical Reader, by Dr. Finley Ellingwood, *Ellingwood Therapeutics.*

Constructive Medical Journalism, by Dr. A. S. Burdick, *American Journal of Clinical Medicine.*

The Advisability of Newspapers and Magazines Having Medical Editors on their Staffs, by Dr. Edgar A. Van der Veer, Albany, N. Y.

On the evening of June 16th, at the Hotel Radisson at 7.30, the annual banquet of this society was held, which was a great success.

First Vice-President Dr. Edgar A. Van der Veer, of Albany, acted as toastmaster.

Election of Officers. The election resulted in the choice of Dr. Victor C. Vaughan, of Ann Arbor, Mich., as president-elect. The president-elect is dean of the University of Michigan. Born on October 27, 1851, in Mount Airy, Mo., he received the degree of Ph. D. in 1876 and of M. D. in 1878. From 1887 to 1909 he was professor of hygiene and physiological chemistry and director of the hygienic laboratory at the University of Ann Arbor, Michigan, where he holds now the office of dean of the university. During the Spanish-American war he served as major and surgeon in the Santiago campaign.

The next meeting will be held in Atlantic City, N. J.

The University of Minnesota as it is to be; view from opposite river bank.

Pith of Progressive Literature.

MEDIZINISCHE KLINIK.

May 4, 1913.

Diet in Diabetes Gravis.—L. Blum says that the chief advance in the dietetic treatment of diabetes is our better acquaintance with the agents which influence the oxidation of sugar. The sugar contents of the blood and other tissues is of special importance in that it exercises a great influence over the oxidation of glucose. With the increase of blood sugar the oxidation decreases, and, on the other hand, by diminishing the blood sugar the oxidation increases; the tolerance for sugar rises. It is clearly a concern of organ function injury through excess of sugar. These facts have been variously analyzed and have been confirmed. The albuminous constituent of food is also of importance, especially that of meat. Here the character of the substance furnishing glucose plays a minor part, as compared with its power to oxidize grape sugar. In what single form this power appears has not yet been determined. This action is most apparent in meat albumin; its presence is much less appreciable in plant and egg albumin.

Istizin, a New Laxative.—E. Ebstein states that istizin, chemically, is dioxyanthiachinone. Its dose is 0.3 gramme and it is best taken at night, dissolved in a little water, as it is tasteless. It is particularly useful for bedridden patients who need artificial means to bring about daily evacuations, for the aged, and in obstinate constipation. It is a useful aid to oil enemata. Aside from being a laxative it has no pharmacological action. It shows no tendency to disorder the digestion. The amount absorbed is too small to irritate the kidneys. Occasionally slight cramps of short duration result from it.

Active Pneumotherapy for the Remnants of Pleuritis.—Sammler asserts the following: 1. Active pneumotherapy with a special pneumatic apparatus is an effectual aid in the aftertreatment of pleuritis. 2. The action obviates pleuritic induration and adhesions; prevents atelectasis of the lungs and bronchial catarrh. 3. This condition usually arises as the acute stage subsides, especially after the appearance of the exudate. 4. The chance of absorption of the pleuritic residue depends upon the length of time between the acute stage and the time of treatment with the pneumatic apparatus. 5. The indications for treatment by active pneumotherapy with this apparatus depend upon determination of the origin and cause of the disease, the individual characteristics of the patient, and a consideration of complications affecting other organs. 6. The active treatment by this method is not to be regarded as excluding other forms of active and passive air treatment. On the contrary, it may be used conjointly with other methods according to the circumstances present and the stage of the disease.

May 11, 1913.

The Influence of Radiant Heat on Body and Tissue Temperature.—A. Fürstenberg shows that by means of hot air, or damp as well as hot compresses, we may heat the deeper lying areas of the body to a higher degree than the general body temperature. Heat radiates from one tissue to others, underlying and deeper. In his experiments the author employed a carefully constructed apparatus which supplies heat from an electric current and at the same time registers the degree of temperature of any designated part of the body by means of a measuring device.

Menthospirin, a New Acetylsalicylic Acid Menthol Preparation.—J. Lowenheim states that menthospirin is an acetylsalicylic acid menthol ester of fluid consistency and a light yellow color. It is used in gelatin capsules of 0.25 gramme. During its action, which is long continued, there are exerted the anesthetic and analgesic influence of the menthol on the mucous membrane of the air passages and an accelerating and strengthening effect upon the heart. The calming and antifebrile action of the salicylic acid is also shown. The regular appearance in the urine of menthol and salicyluric acid, after ingestion, is proof of the splitting up of the esters in the organism. Two or three capsules daily may be given adults.

Contribution to the Action of Hypophysis Extract (Pituglandol).—M. Guggenheim has employed injections of 1 c. c. of pituglandol into the femoral vein of narcotized rabbits. Upon examination of a large number of normal animals there were constantly to be found those which presented various forms of immunity to pituglandol. It is possible that this immunity corresponds to the refractory instances observed in gynecological practice. The author questions whether any effect on the internal secretions may be brought about by pituglandol. According as the quantity of internal secretions of the affected organs is large or small, the various phases of action of pituglandol will appear, but should the mobilizing substances fail completely the pituglandol will prove ineffectual.

Hot Baths for Sprains.—Kantorowicz says that, within the last decade, the prolonged local hot bath has replaced the former lead water applications for sprains. In sprains we have to do with extravasation of blood as a result of torn ligaments, rather than with inflammatory processes. When the prolonged hot bath is employed the injured joint is placed in water as hot as can be borne immediately after the injury and the water is kept hot by adding more every five minutes, keeping up the hottest possible temperature for half an hour. It is astonishing how easily and painlessly the joint can be moved after this treatment. This result, however, is seen only in cases of simple sprain, as from a tearing of one or more ligaments. Should there be the slightest bone injury the patient's suffering would be increased by the hot water. The prolonged hot bath is accordingly an important remedy to differentiate between a fracture and a sprain. For the general practitioner it takes the place of the Röntgen apparatus.

May 18, 1913.

The Practical Use of Blood Examination in Lead Poisoning.—I. Schoenfeld, as a result of his observations, finds the following: 1. Hemological examinations permit the detection of lead poisoning in its first stage. 2. In addition to basophiles,

rich supplies of metachromatic red cells also found in the blood of patients working in lead, and point to existing lead poisoning. 3. Therapeutic measures may at once be taken for those suffering with lead poisoning. 4. The condition of those poisoned by lead absorption may be continually determined by blood control tests.

Valamin, a New Sedative and Hypnotic.—Stein states that valamin is the valerianic acid ester of amyl hydrate. The preparation is used as a sedative and narcotic in doses of from 0.5 to 0.75 gramme. Neurasthenic patients suffering from insomnia and fear were treated with good results. In only one instance was slight excitement observed. In many cases several capsules containing 0.25 gramme were given an hour before minor operations, which, with later administration of relatively small doses of Billroth's narcotic mixture, produced deep narcosis.

May 25, 1913.

Demonstration of Bile Coloring Matter in the Urine and Blood by Means of Iodine Ether.—Packuscher and Gutmann present the following to prove the presence of bile coloring matter in the urine and blood. A solution of iodine and ether is used; the solution is shaken several times; the superfluous iodine being thus removed. In the presence of bile coloring matter the watery stratum turns green. For the urine 5 c. c. of urine and 1 c. c. of a one half per cent. solution of iodine are well shaken together. Two strata are formed, the upper one of ether iodine solution and the lower one a greenish, blue colored fluid. The superfluous iodine is now removed with ether until the upper stratum of ether is a very light brown or probably colorless. The green color of the watery layer then shows up more distinctly. In the demonstration of bile coloring matter in the blood there is mixed with 2 c. c. of blood serum, 3 c. c. of absolute alcohol. After shaking and filtering out the precipitated albumin the filtrate is acidulated with 0.3 to 0.5 c. c. m. of 25 per cent. hydrochloric acid. Two c. c. of distilled water and 0.5 c. c. of 0.5 per cent. ether, iodine solution added, and shaken together for several minutes. Then, again, the surplus iodine is removed with ether and, in the presence of bile coloring matter, the lower watery layer remains absolutely colorless. The blood serum used must contain neither hemolytic nor red blood corpuscles. The authors state that bile coloring matter was often found in the blood of patients who had had a catarrhal icterus, when there was no more bile coloring matter to be found in the urine.

ZENTRALBLATT FÜR CHIRURGIE.

May 24, 1913.

Phenol Camphor Treatment of Various Diseases of the Joints and Cold Abscesses, including Tuberculous.—Felix Pohl reports a number of cases in which he has obtained good results from the injection of two c. c. of the following mixture, Liquefied phenol, 30.0; triturated camphor, 60.0; alcohol, 10.0; into the inflamed joint, repeated at intervals of ten or more days. If the joint contained fluid or pus it was removed by aspiration before the injection.

PRESSE MÉDICALE

May 15, 1913.

Nonascitic Form of Tuberculous Peritonitis.—P. F. Armand-Delille reports ten cases of tuberculous peritonitis without ascites, most of which were operated on in the belief that either appendicitis, cholelithiasis, or annexal disorders existed. Recognition of such cases is especially important, owing to the possibilities of harm attendant upon dietary restrictions in a tuberculous affection. The disorder occurs oftenest in children and female adolescents, and becomes first manifest either in rather acute peritoneal symptoms, such as vomiting and colicky pains, with marked febrile reaction, or in more insidious phenomena. At all events, after the period of onset, there is nothing definitely to indicate peritoneal involvement. A febrile or subfebrile condition persists for weeks, there is anorexia and loss of weight, but the tongue remains clear and the general state appears but little impaired. It is only after several weeks, sometimes two or three months, that there may appear slight doughiness of the abdomen and, in exceptional instances, one or more masses imparting a sensation of "caking" in the omentum. The prognosis, even without treatment, is for the most part favorable. In one of the author's cases, which was not operated, recovery took place under heliotherapeutic treatment at an altitude. The early more or less acute symptoms, with the subsequent sluggish course of the disease, constitute its most characteristic features.

The Spinalis Muscle Sign.—F. Ramond thus designates a reflex contracture of the spinalis muscles occurring in pleurisy and tending to immobilize the thorax and involved pleural surfaces. With the patient either in the standing or sitting position and without inclination of the trunk to either side, there is noted in the lumbar region, below the twelfth rib and external to the spinal column, unusual prominence, hardness, and lateral width of the spinalis muscles. The sign may be present on one or both sides; generally it is very marked on the affected side and much less so on the other. It may occur normally in those accustomed to carrying heavy burdens and in women with pronounced lordosis, as well as in the presence of any painful morbid process involving the region—lumbar contusions; meningeal, chondral, or osseous inflammation at the lumbar spine; lumbago, sacroiliac rheumatism; dorsolumbar, sciatic, or inferior intercostal neuralgia; painful renal and hepatic disorders; diffuse peritonitis, etc. All these conditions, however, are such as can readily be recognized, and in their absence the sign indicates pleurisy. It occurs very early, sometimes two weeks before there is an appreciable effusion, and persists several weeks or months after the disappearance of the latter.

SEMAINE MÉDICALE.

May 21, 1913.

Curative Action of Leucocytolysis Induced by Passage of X Rays through the Spleen.—I. Manoukhine refers to former papers in which he showed that the chief factor in the defense of the

organism against various poisons and infections was leucocytolysis, that is, the destruction of leucocytes with liberation of antibodies into the plasma, that the spleen is the organ which produces "leucocytolysins," and that their production may be greatly accelerated by exposing this organ to a certain dose of the x rays (about one per unit). He now reports therapeutic results obtained in three cases by thus artificially increasing the leucocytolysins. In a patient with influenzal pneumonia, two irradiations of the spleen, at an interval of two days, each caused a fall in temperature with rapid improvement in the physical signs; after the second treatment recovery promptly took place. In a case of chronic lung tuberculosis, repeated irradiations caused, along with an increase in the leucocytolysins, a gradual return of the temperature to normal, a prompt gain in weight and appetite, diminution of cough, and, later, improvement in the physical signs. In the third patient, suffering from purpura hæmorrhagica and pronounced anemia, similar treatment was followed by rapid return of the blood, including the coagulation time, to normal. Manoukhine believes the procedure he advocates to have a wide field of usefulness in the treatment of infections of all kinds and in certain blood disorders. Not only does the procedure set free leucocytic antibodies, but it tends to stimulate the formation of fresh leucocytes.

ROUSSKY VRATCH.

March 23, 1913.

The Clinical Significance of Increased Output in the Urine of the Products of Insufficient Splitting of Albuminous Substances.—P. I. Philosophow and K. W. Klutchnikowa established the fact that there is a greater output of incompletely oxidized proteids in the urine of patients with cancer, provided the determinations are made in the absence of fever. They elaborated a very accurate method of determining the relation of the amido acids to the total nitrogen.

March 30, 1913.

The Treatment of Pulmonary Tuberculosis with Tryparosan.—I. A. Valedinsky employed tryparosan (a derivative of fuchsin) in eight cases of pulmonary tuberculosis, all in the advanced stage, without the slightest benefit.

April 6, 1913.

Potassium Iodide as a Reactive in Cancerous Growths and as a Therapeutic Agent, Together with Subcutaneous Administration of Sodium Arsenate in a Solution of Phenol.—M. P. Michajloff finds in recent publications by Blumenthal and others, corroboration of his observations to the effect that, in suspected malignant growths, an elevation of temperature following a rectal injection of potassium iodide (4 grammes, with sodium bicarbonate 2 grammes, and water 90 c. c.) will differentiate malignant growths from syphilis. He compares this reaction to tuberculin and asserts that it is equally specific. He contends that the employment of these rectal injections, together with subcutaneous administration of sodium arsenate in 0.25 to 0.5 per cent. solution of phenol, will prevent recurrence and even bring about a cure of cancer and sarcoma.

April 13, 1913.

Pituitrin in Country Practice.—I. A. Erastoff reports three cases of labor in which he employed pituitrin with very favorable results. The first case was one of placenta prævia marginalis with left occipital anterior position. Three injections of pituitrin controlled the bleeding and terminated the labor satisfactorily. In the second case uterine inertia was overcome by a single injection of pituitrin, labor terminating thirty minutes after the injection. In the third case a prolonged labor was caused by a hydrocephalus. Two injections of pituitrin caused sufficient dilatation of the cervix to permit craniotomy and the successful termination of labor.

April 20, 1913.

The Effect of Caffeine on the Isolated Heart of Coldblooded Animals.—V. I. Berezin experimented with caffeine on the isolated hearts of frogs and fish. He found that the height and frequency of cardiac contractions are increased, the augmentation depending on the concentration.

Repeated Rupture of the Uterus during Labor.—S. M. Mironowa reports the case of a woman of forty who had rupture of the uterus with her fourth labor, a Cæsarean section with the fifth, premature artificial labor in the eight month with the sixth, and another spontaneous rupture of the uterus with the present, the seventh labor.

LA SEMANA MÉDICA.

April 10, 1913.

Ambulatory Form of Typhoid Fever.—Abeberry Oneto says that typhoid fever has been known since the year 1500, but at first it was not distinguished from other febrile diseases. The great authorities of the twelfth century, Huxhan, Stoll, etc., recognized it. They first described it under the name of putrid, malign, or petechial fever. A great deal has been written lately on typhoid fever, but very little study has been made of the form known as ambulatory, which is very difficult to diagnosticate and also very interesting. The author says that Louis described this form of the disease in 1828 and called it latent typhoid affection. He told of two cases of intestinal perforations in which the patients had had hardly any fever. Many authors point out the differences between the symptoms and lesions that are found at autopsy. Griesinger, referring to the so called apyretic typhoid fever, denies its existence and says that there is no typhoid without fever; he adds that some patients may have a transitory state of apyrexia caused by hemorrhage, but the process of typhoid is always pyretic and the fever symptoms are in all cases the most important morbid elements by which to measure the intensity and the changes in each patient. According to Abeberry, the name apyretic expresses only the short period of the fever, so that, for Griesinger, abortive typhus would be a mild form of typhoid, while the ambulatory form, much more apyretic, would be a very severe and insidious typhoid.

Affective Indifference in Mental Disorders.—Coubon states that indifference is a condition that abolishes all desire and makes the patient incapable of sadness or happiness. A careful examination of the conduct of the insane makes one sure that

there exists a mutilation of all the constitutional tendencies. If one of them is in a better condition it is at the expense of the others, but in reality they are all complicated. In fact, indifference, according to the author, is a main symptom of lunacy, and without it the diagnosis could not be confirmed. Moral indifference is the first symptom of dementia. Altruistic indifference shows itself by progressive relations and, later, by the dissolution of affection which binds the patient to other beings. The demented is the one who suffers less than any of those who have mental disorders. He is quickly reconciled to being sent to the asylum and is easily separated from all his affections. The exaggerated benevolence shown by some patients is not due to an exalted altruism, but to the delirium of grandeur and riches. He gives all the money he possesses, but does not give his food to another patient. The demented, according to the author, is rather more influenced by his spirit than by his heart. Want of curiosity is a constant sign of dementia. The patient dislikes what he used to like and does not pay attention to anything that goes on around him. Those who talk the least and who ask the less are the real demented, and when they complain it is because the disease is complicated with another psychosis. Personal indifference is less manifest than the other forms, although at first it appears that the patient thinks only of himself and is selfish. He is irritable and the indifference with which he receives insult, and the tolerance of humiliation, the want of indignation, and the complete shamelessness, are considered acts of cynicism until the physician gives his diagnosis of the disease.

April 17, 1913.

Treatment of Osteoarticular Tuberculosis.—Ymaz affirms that the precision and certainty of the treatment at present of osteoarticular tuberculosis are due to the greater knowledge we have of the development of the tuberculous process and to the rational use of hygienic factors, which modify the soil in which the Koch bacillus develops, and therefore act upon the development of the disease. The process used is not a new one, but it gives better results because it is applied with greater ability. Osteoarticular tuberculosis is not, as is erroneously supposed, a local infection, as in the great number of cases the osteoarticular focus is accompanied by another focus also tuberculous, and whose seat may be in the lungs, pleura, ganglions of the mediastinum, etc. Just as surgical tuberculosis was not accepted before, we must now reject local tuberculosis, because these may lead us to an error in therapeutical principle of fatal result to the patient. In these forms of the infection the practitioner must direct his work upon the part affected with the purpose of destroying the local tuberculous colonies. The main factors of the treatment advised by the author are: First, functional rest, that is, abolish the function of the affected member, because if the member is in a pathological condition we do not otherwise obtain anything but the exacerbation of the lesion and make irreparable those lesions which could probably be modified. The second factor is immobility; this completes the result obtained by the rest. The latter is more important in restless children, in which rest is always insufficient. According to the author, the treatment is long and good results depend upon the systematic application of the hygienic treatment: heliotherapy combined with rest and immobility of the affected part.

BRITISH MEDICAL JOURNAL.

May 31, 1913.

Further Experience of the Cardiac Sign in Cancer.—William Gordon describes this sign as a diminution in the area of cardiac dullness in the recumbent position, as determined by digital percussion. In the normal adult the dullness in that position begins about the third costal cartilage, reaches to the right as far as the mid line, and measures across three to three and a half inches at the level of the fifth costal cartilage. In the cancer patient who presents the sign the dullness begins above at about the fourth or fifth costal cartilage, its right margin is from one half to one inch to the left of the mid sternal line, and it measures less than two inches across at the level of the fifth costal cartilage. The percussion used should be moderately light. Gordon gives three possible explanations for the sign. The first is that in some cases of cancer the heart is small, but this does not hold for the majority of cases. The loss of elasticity so marked in the skin may involve the lung tissue, and it is conceivable that a sort of emphysema may be produced thus. Such a form of emphysema is known to occur in cancer, and this undoubtedly helps to produce the sign in many cases. Lastly the cardiac sign is often associated with a very soft and toneless pulse, and with very feeble heart sounds. These phenomena are attributable to a deficiency of blood and a condition of flabbiness of the heart muscle comparable to that of the skeletal muscle. The imperfectly filled soft heart may be supposed to fall back from the chest wall farther in the recumbent position than does the normal firm organ. The striking feature is the great disparity between the area of dullness in the standing and that in the recumbent positions. The sign has certain limitations, namely, in emphysema it is of no value; in conditions in which the organ can be supposed to be abnormally enlarged it is also not useful; the same is true in conditions which tend to increase the area of dullness through retraction of the lung; it is not trustworthy when abdominal distention displaces the heart upward, and it is absent in cases of large esophageal cancer. The sign was found to be positive in eighty-seven per cent. of ninety-three cancer cases, and in only fourteen per cent. of 117 noncancerous cases.

Lipodystrophia Progressiva.—F. Parkes Weber reports seven cases of this condition, which he defines as "A morbid condition, possibly confined to the female sex, and characterized by progressive disappearance of the subcutaneous fat from the face, upper extremities, and trunk, whereas the fat of the lower extremities remains unaffected or is increased in amount." Weber remarks that it is by no means certain that the condition is always a progressive one, but for the present the adjective had better be retained. The cases differ considerably—in some there is a wasting of the fat of the

upper portions of the body and of the face, while in others the condition seems, rather, to be one of increased deposition of fat about the hips, buttocks, and lower extremities. It is an exaggeration of what constitutes almost a secondary female sex character. The symptoms may begin early—at ten to thirteen years—or later, up to between twenty and thirty years of life. It does not seem that the disease is connected with any obvious disorder of the thyroid gland or of the ovaries. In a sense it might be termed a trophic disease, but its origin is uncertain and its treatment is, as yet, unknown. Weber suggests that possibly certain cases of bilateral facial wasting encountered in men may belong in the same category.

Chronic Pneumococcal Infection of the Lungs in Children.—P. L. Sutherland and A. A. Jubb have made careful bacteriological studies of the sputum from 1,824 adults and 230 school children, finding tubercle bacilli in 33.7 per cent. of the adults' and in only 9.1 per cent. of the children's specimens. In guineapig tests with series of questionable sputa 11.9 per cent. were positive in the case of adults and only 2.9 per cent. in the case of children, giving the same relation of incidence—three to one—of tuberculosis of the lungs in adults and children. A large number of the guineapigs died early from acute peritonitis of pneumococcal origin. Both from adults and children about forty per cent. of the pigs died of this infection, showing the prevalence of this organism. The authors believe that many of the children examined, and suspected of having pulmonary tuberculosis, are suffering from a chronic pneumococcus infection. Such children present the following features: 1. The condition is often the sequel, immediate or remote, of measles or whooping cough; 2, cough, sputum, and emaciation are variable in amount and degree; 3, tubercle bacilli are not found in the sputum.

The Treatment of Adenoids and Enlarged Tonsils without Operation.—W. Stewart has employed x rays in a considerable series of cases and concludes that: 1. Röntgen rays have a stimulating effect on chronically inflamed adenoid tissue, and enable it to resume its healthy condition. 2. The tonsils do not entirely regain their normal size except in favorable cases, the diminution in size being dependent on the time the organ has been inflamed, or on the amount of fibrous tissue that has been formed. 3. The decrease in size is sufficient to remove all obstructive symptoms. 4. Conditions dependent on the septic state of the tonsils and adenoids are relieved. The radiological treatment takes longer than the surgical, but there is no shock and no convalescent period. Operation does not include all the affected area, whereas radiation does. It is better to restore structures which have a function to a state of health than to remove them.

The Cause of Enlarged Tonsils and Adenoids in Children and Their Treatment with Lymphatic Gland Extract.—Hugh T. Ashby makes this sweeping statement: "Many theories have been put foward as to the cause of enlarged tonsils and adenoids, but I think it is possible to rule all of them out conclusively. For this reason I am advancing a new theory, which may have some connection with their enlargement." His theory is based upon the fact that the age of greatest frequence of these affections is that at which the lymphocytes are normally beginning to fall from the high proportion found in infants to the adult standard, and in addition, the thymus is also decreasing in size. The children affected with these conditions (enlarged tonsils and adenoids) have a diminution of lymphocytes and an increase in the total number of leucocytes. Ashby, therefore, assumes that the tonsillar and adenoid enlargements are a compensatory attempt to augment the lymphoid tissue in the body and to supply the deficiency in the other lymphoid tissues. On this basis he has treated several cases with an extract of lymphatic glands, and has seen very satisfactory improvement in the conditions present.

LANCET.

May 31, 1913.

Electrical Action of the Human Heart.—A. D. Waller (Lecture II) continues his discussion of the measurement of the angle of the electrical current of the heart. In addition to giving an excellent discussion of auriculoventricular dissociation, he describes several cases of a condition which he terms *hemitachycardia*. In this condition the radial pulse is usually rather slow, and immediately following it there is a visible pulsation in the neck which has the same rate. On auscultation there is a comparatively loud, sharp first sound preceding the radial pulse, and followed by a weak second sound just after the pulse. Occasionally the heart sounds are of a cantering rhythm —UU/—UU, while at the same time the pulse is irregular and of a limping rhythm —U/—U. Electrocardiograms of this condition show that the heart is beating at twice the rate of the pulse, every second beat being a ventricular extrasystole which does not reach the radial, but which is seen in the jugular and which appears here *after* the radial pulse. Waller analyzes this condition with great detail and presents evidence to show that this is not a condition of hemisystole, as von Leyden has thought, but that it is a condition of regular extrasystole. The extrasystoles are of ventricular origin, and hence the conduction is reversed at this time. From this point on it is but a step to outline the mechanism and stages in the development of a cardiac irregularity. When extrasystole appears, the heart is in a state of increased irritability; when slight, leading to only an occasional extra beat; in extreme cases to a storm of extrasystoles producing an attack of tachycardia. We then have, in the intermediate state, a condition of hemitachycardia characterized by: 1. An infrequent radial pulse; 2, a double precordial impulse, half preceding and half following the radial; 3, a double jugular pulse corresponding with the precordial; 4, an electrocardiogram showing coupled beats. The successive stages are then: 1. An occasional extrasystole; 2, frequent extrasystole; 3, regular extrasystole; 4, hemitachycardia, pulsus bigeminus vel infrequens; 5, tachycardia; 6, Pulsus alternans vel irregularis perpetuus; 7, delirium cordis—asystole—exitus letalis. Throughout his paper Waller mentions the working time of the heart. This is calculated from the

apex beat electrocardiograms by the fraction $\frac{\text{duration of systole}}{\text{duration of cycle}}$, and can be expressed as a fraction or in hours. Normally the fraction is ⅓, or eight hours, varying with the frequency of the pulse, etc., between the limits of ¼ to ½, or six to twelve hours. An eight hour heart obviously has more working capacity, under normal conditions of work, than a nine hour one; it has more than the average reserve power, and a large margin of safety.

The Analysis of Nystagmus.—Adolphe Abrahams describes a method of measuring and analyzing this condition by means of cinematography. One eye only is photographed at a time, and the pictures are taken at rates varying from twenty to twenty-five a second. A mercury vapor lamp or an enclosed arc light provides the illumination. The reel of films is driven mechanically, and across the eye aperture in the mask used to limit the photograph to one eye two fine threads were stretched at right angles to provide fixed points from which to take measurements. He finds that the velocity of the movements of the eye is irregular in the different nystagmic phases. Between the nystagmic and reactionary phases the relation of five to three exists if the velocity of the movement is considered, and of three to five if duration of the phase be taken. Abrahams compares his method with that of Buys, and admits that photography and subsequent analysis is much more time consuming and laborious than is the use of the nystagmograph. On the other hand, the instrumental errors of the latter are obviated by photography.

A Bacillus of an Unusual Kind Isolated from a Case of Septicemia.—J. A. Braxton Hicks isolated a bacillus of the proteus group in two instances of blood culture ante mortem, and from the blood and tissues post mortem, in the case of a woman who died of a septicemia arising apparently from a chronic vaginal infection.

CANADIAN MEDICAL ASSOCIATION JOURNAL.

May, 1913.

The Surgical Treatment of Pendulous Abdomen.—James McKenty describes two cases of an extreme type of pendulous abdomen in which he operated successfully. In the first case he performed the operation most in favor among English and American surgeons, the double breasted coat operation, and added an overlapping of transverse flaps at each end of the median incision. A median incision, extending from the pubes to a point midway between the navel and the ensiform cartilage, was made through skin and fat down to the aponeurosis, which was then exposed by reflecting the skin and fat on each side as far as the semilunar lines. The umbilicus was excised, a hernia was cared for, a diseased appendix removed after the abdomen had been opened by a median incision, the two aponeurotic flaps thus formed were overlapped from side to side and secured by a series of mattress sutures along the margin of the right, passed from within outward, and coming out through the left semilunar line, while the margin of the left flap was sutured to the outer surface of the left semilunar line. A transverse incision, about four inches long, was then made across each end of the median incision, and closed by overlapping from above downward; thus shortening the linea alba about four inches, as well as preventing puckering. Superfluous skin and fat were then excised, and the wound closed. In his second case he made a transverse incision about nineteen inches long across the abdomen, reflected the skin and fat upward and downward, and opened the abdomen by a transverse incision carried across the middle of the exposed area from the inner border of one rectus to the inner border of the other, thus forming an upper and a lower aponeurotic flap. These flaps were then overlapped to the extent of eight inches and secured by wire mattress sutures. Both patients were completely relieved of their symptoms, but the improvement in figure was not as good in the second as in the first case. The conclusions he draws from his study of this subject are: 1. That there are two main indications, first to bring the rectus muscles together, second to correct the vertical elongation of the aponeurosis. 2. That the double breasted coat operation, supplemented by a transverse incision, with overlapping in the vertical direction, effectively meets those indications. 3. That the Webster operation, opening the sheaths of the recti and joining the muscles without opening the abdominal cavity, is suitable for mild degrees of relaxation only. Even in these the other method is preferable. 4. That the practice of some surgeons of mobilizing the rectus muscles, drawing them out of their sheaths, and suturing them together in the median line, does not seem to be well considered. Such disturbance must affect injuriously their nerve and vascular supply, and they are usually too much wasted to add much to the strength of the wall. 5. That in cases associated with much subcutaneous fat the transverse is preferable to the median incision, inasmuch as it permits of free excision of the fat in the flanks, where it is most abundant. 6. That the good results of operation in pendulous abdomen strongly support the view that a normal intraabdominal pressure is the most important factor in maintaining the viscera in position. 7. That the condition has not received the attention it deserves at the hands of the profession.

Salvarsan in the Treatment of Syphilitic Diseases of the Central Nervous System.—Robert G. Armour states that there has been a great deal of misunderstanding and unnecessary fear of danger to the special senses, especially sight, in salvarsan therapy. So far, he says, in many hundred cases treated, we have seen no injurious action to the special senses. It is now understood that one dose may be sufficient to bring about an exacerbation of symptoms in cases of syphilis. This can be readily seen in the pains of a tabetic, which almost invariably become worse after the administration of salvarsan. If then we stop at this point in the case where a patient's optic nerves are affected, it is obvious that the increased inflammatory reaction, lasting perhaps only a few hours, may be just sufficient to cause permanent impairment of vision. Rather than proceed cautiously, we must, having once started, push on rapidly until we have conquered the process.

BOSTON MEDICAL AND SURGICAL JOURNAL

June 5, 1913.

The Relation of Bacterial Metabolism to Internal Medicine.—Arthur I. Kendall presents evidence illustrative of the nature and extent to which utilizable carbohydrate spares protein and protein derivatives from bacterial attack. The carbohydrate protects protein largely from bacterial breakdown. The sparing action is not complete, but it results in the practical elimination of nitrogenous products incidental to bacterial development, some of which may be toxic, and the substitution for them of substances which are nonnitrogenous, which may be irritative, but probably never truly toxic. This evidence is presented chiefly to indicate how the principle involved may be made use of therapeutically in the treatment of diseases of bacterial origin, where the anatomical features of the disease are such as to permit the utilization of carbohydrate by the invading microorganisms. The object of the diet rich in carbohydrate is twofold; physiologically to provide the patient with a readily assimilable food requiring a minimal amount of digestive energy to prepare it for the tissue needs, and bacteriologically to shift bacterial metabolism from the destruction of body tissue for their food requirements to the utilization of carbohydrate for at least the major part of their dietary needs. This does not directly result in annihilation of the invading bacteria, but it certainly approaches their metabolic reformation. The shifting of metabolism to sugars appears to deprive these microbes of one of their most potent weapons of offense, and forces them to act on the defensive; forcing the parasite to act on the defensive theoretically at least permits the host to rally and to strengthen its defensive and even its offensive powers earlier in the battle. The initial damage, brought about when the host is temporarily overwhelmed by the onslaught of the invaders, cannot be estimated at present, and perhaps cannot be undone. The final struggle between host and parasite can be influenced directly and favorably.

Common Colds and Vaccine Therapy.—Jessie Weston Fisher says very truly that "the best way to cure colds is not to catch them," but if we will catch cold she would have us remember that the affection is far from being trivial. Colds are unquestionably due to infection by microorganisms, they are contagious, and they can be largely prevented by reasonable isolation of every case and preventive inoculation. They can be aborted, or their course shortened, by vaccine treatment, which she maintains is specific for acute and chronic inflammations of the respiratory tract.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

June 7, 1913.

Meningitis of the Epidemic Type in Children below Two Years of Age.—Henry Koplik affirms that the diagnosis and treatment of cerebrospinal meningitis in children below two years of age has become an important problem. These patients often present symptoms which are misleading, and therefore in numerous cases an early diagnosis is not made. The diagnosis is often masked, the attendant not even thinking of meningitis. The fear of making a lumbar puncture and finding a clear fluid normal in every respect, with the consequent doubting attitude of those about the patient, deters many from using this necessary aid to an early diagnosis. We should never lose sight of the possibility of meningitis in the very young and that perfect and accurate early diagnoses are essential. A day's delay in older children is without danger, but the same delay in a baby means its death. The stress of diagnosis must rest on the persistence of cerebral symptoms, high fever, and, most important of all, Macewen's percussion note over the frontoparietal juncture as a sign of increasing fluid in the head. A tense fontanelle is of some value, but may be misleading. As to treatment, lumbar puncture and the injection of serum give the best results. In infants below two years of age, in whom meningitis is suspected, an early lumbar puncture should be made, so that treatment may be begun as soon as possible. The fluids should be withdrawn slowly and with the greatest caution, and the serum be introduced very slowly in order that the traumatism and extreme changes of pressure may be avoided. The temperature is a guide of value as to the necessity of repeated puncture and introduction of serum, as in older children, but in face of great restlessness and a normal temperature fluid should be withdrawn and examined for bacteria. If these persist and a cloudy fluid is obtained, it is safe to reintroduce serum rather than delay and wait for actual cultures to determine whether the fluid is sterile or not. Great caution is necessary before pronouncing such patients cured.

Prevention of Disease versus Cost of Living.—Thomas F. Harrington lays stress on the fact that the whole problem of the high cost of living is a social one. Increased cost of living will hardly be lessened or altered by laws or mode of life. Such remedies are almost entirely academic. Preventive medicine, however, does offer a solution of the question, in part at least if not in its entirety. It demonstrates how the enormous waste of health, energy, money, and life may be lessened and greatly prevented. An assurance of greater power, greater health, greater wage earning ability is guaranteed to those who will learn its lessons and apply even its simplest teachings. An efficient, healthy mode of life, physically, mentally, and morally, means a nearer approach to the normal living standard of each individual.

The Possible Relationship of Organic Diseases of the Nervous System to Riggs' Disease.—The experience of Joseph Collins has convinced him that Riggs's disease may be the causal factor of serious organic disease of the nervous system; while he can offer no other proof of this than the occurrence of such diseases in persons afflicted with pyorrhea alveolaris, the absence of other causes and the improvement or disappearance of the disorder after the pyorrhea has been treated locally and constitutionally by means of autogenous vaccine, he nevertheless presents the reports of three cases for consideration; two cases of myokymia (one simple and one complicated) and one case of multiple neuritis. The offending organism in these cases is the *Streptococcus viridans* which has been isolated from a tooth

socket after the extraction of the tooth. The writer adds that the time has come when we must treat seriously what has heretofore been considered to be only an offensive disorder, and to institute early measures that will prevent a systemic infection which may become far reaching and extremely serious.

A Spirochete Associated with Infections of the Accessory Sinuses.—Ruth Tunnicliff, in examining smears from the noses of patients with acute rhinitis observed, in five cases, a spirochete, staining deeply with carbol gentian violet. In four of the cases it was found in connection with infections of the accessory sinuses. In the other case there was only a history of severe acute rhinitis. The spirochete has two or three curves, the ends being pointed and parallel to the long axis; it measures from two and a half to five microns in length and one half micron in width; it is anaerobic and was isolated in pure culture on alkaline goat blood agar. The growth appeared on the surface after seven days' incubation as a dull radiating growth; later it appeared also in the fluid of condensation. The significance of this spirochete has not been determined.

Incontinence of Feces (Nonorganic).—L. H. Zeuch states that in this disorder there is sphincteric relaxation but not a paralysis. The muscle fibres respond to stimuli and are controlled at will, but formed stools pass through without the knowledge of the individual, as often as five or six times a day. Moral suasion will not control the evacuations, nor are vegetable astringents, taken internally, of any use. Ergot, strychnine, and hematic tonics are occasionally successful, but only after several weeks' use. The writer reports a case under his care in which he suspected seat worms a possible etiological factor. He administered a high injection of a solution of mercuric chloride (1:10,000), with a pump syringe. After holding a pint of this solution for fully ten minutes, he had a copious evacuation of formed stools. Internally, ten minim doses of ergot were given every five hours. Since then (nine months ago) the patient has had control of his feces. The writer gives credit to the mercurial solution, as the evacuations ceased before the ergot and tonics had had time to act; although they may have prevented recurrence.

MEDICAL RECORD.

June 7, 1913.

The Acid Test in Therapeutics.—John Aulde, believing that the chemical problem in nutrition overshadows in importance all other questions, seeks to establish certain fundamental principles as a basis or foundation for clinical research. He emphasizes the significance of the acid test to determine the physiological equilibrium as well as the chemical status of the body fluids and tissues. The importance of the chemical problem in nutrition depends upon the absolute necessity of inorganic matter to promote function—without chemical stimulus we should have no physiology. The vital phenomena in animals and plants are regulated, modified, or governed by the chemical reactions of the nutritive pabulum—and the correlation is complete. Chemical deviations in the body fluids, therefore, may give rise to what might be termed a "habit," a self perpetuating disorder, such as hyperchlorhydria. A critical study of the chemical relations must convince the impartial student that Bright's disease is curable, in the sense that neuritis and neuralgia are curable. A diminished alkalinity of the blood passing through the kidney tissues has interfered with function and destroyed structure—that is, an excess of acid has produced organic disease. That obscure nervous phenomena may be due to acid excess may be proved, because the plan of treatment advocated causes them to disappear, and the results may be correctly calculated providing degeneration has not caused structural cell changes. With a single exception, the gastric fluid, all retrograde changes (catabolism) are characterized by acid reaction (urine, perspiration, mucus). The normal condition incident to anabolism (upbuilding process) is alkalescence, while acidity is normal in catabolism. The demonstrable effects of acid excess are found in a study of metabolism. The acid excess of intestinal indigestion depletes the lime content of the tissues, leading to various nervous symptoms, including anemia and lack of bone making material. Lime salts promote function and maintain structure and *vice versa*, and calcium depletion involves also the integrity of ferments. Hence the importance of the acid test.

The Relation of Syphilis to Progressive Muscular Dystrophy.—Williams B. Cadwalader and E. P. Corson-White suggest that while the actual cause of progressive muscular dystrophy has not yet been discovered, the evidence so far gathered seems to indicate that congenital influences are most potent in its development. It has never been explained, however, how it is transmitted from parents to children, or why it appears in the child without the same disease being present in the parents. The writers have studied a number of patients afflicted with this peculiar malady, and having found that the blood serums frequently reacted positively to the Wassermann and Noguchi tests, it appeared to them that syphilis might hold an important relationship, and they have recorded the notes of thirteen cases in which the original Wassermann technic was employed with all of its controls. To further control the result, each serum was tested out again, using four different antigens with all of the controls. In no case was a dystrophy considered positive unless the test with each different antigen gave a clear cut positive result, and the same care was used in the results with the families of these patients. Of twenty-seven cases investigated, seven gave positive serum reactions. In three instances one of the parents also had positive reactions, and one of these had facial paralysis which might have been due to syphilis. Unaffected brothers or sisters of patients gave positive reactions in three families. Miscarriages were said to have occurred in five families. The conclusions drawn from the above facts are that six of the patients with myopathy were infected with syphilis, and that it was hereditary, and was therefore present before any evidences of myopathy had developed. Whether the presence of syphilis is essential to the subsequent development of pseudomuscular hypertrophy, or whether in these cases it was a mere coincidence that two distinct and separate diseases

were observed, is a question the writers do not attempt to answer.

AMERICAN JOURNAL OF OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN.

May, 1913.

Is Albuminuria Likely to Recur in Successive Pregnancies?—Slemons, drawing conclusions from his private practice and from the records of the Johns Hopkins Hospital of cases of toxemia in pregnancy, holds that one of every five or six women who have had a high grade albuminuria in the first pregnancy will suffer from autointoxication in the second. The author does not include cases of mild and temporary albuminuria; what he says relates to those in which the albumin is sufficiently abundant to be measured by the Esbach apparatus, in which there are numerous tube casts, and in which the symptoms are so outspoken as to leave no doubt of the existence of an autointoxication.

The Treatment of Uterine Hemorrhage by Means of the Röntgen Rays.—Pfahler reports twenty-one cases of uterine hemorrhage associated with fibromyomas, and two cases in which there was no palpable tumor. He concludes that röntgenotherapy is the method of choice for the control of hemorrhage in patients approaching the menopause, in whom carcinoma can be eliminated. It is not the method of choice in patients under forty years of age, but can be recommended in all cases of any age in which operation is contraindicated.

Abstraction of Calcium Salts from the Mother's Blood by the Fetus, the Cause of the Rapid Progress of Tuberculous Processes.—Inasmuch as pregnancy and lactation both deprive the mother of calcium salts, Drennen holds that there is consequently less calcium for the process of calcification of the tuberculous areas—Nature's method of cure in tuberculosis. This, therefore, accounts for the rapid course of tuberculosis after pregnancy, increasing after every succeeding pregnancy until the woman generally succumbs after the third.

The Operative Treatment of Puerperal Septicemia.—Darnall cautions against the dangers of the indiscriminate use of the curette, this being reserved for those cases only in which the retained products cannot be removed effectually by the finger or douche; the time for action being at the first rise in temperature after delivery. Whenever manipulation is adopted it should be done in the very beginning of the trouble. Local treatment by curetting after the infective organisms have penetrated the body of the uterus is useless and may produce great harm. If diffuse peritonitis results, an abdominal section is the operation of choice. Drainage should preferably be through the vaginal vault, though in some cases it may be through the incision of a stab wound. Irrigation should be by normal salt solution at a temperature of 100° F., avoiding as far as possible any handling of the tissues or disturbance of the adherent flakes of fibrin. Treatment by excision of the involved vessels in thrombophlebitis is not considered of great value. As the death rate where hysterectomy has been done in puerperal cases has reached seventy per cent., it can hardly be advised, as this is considerably higher than the mortality from puerperal infection of severe types treated without operation.

Reaction in Those Operated upon for Tuberculous Conditions.—Furniss found that when he operated upon tuberculous patients there was a distinct reaction. This was characterized by a rise of temperature of from two to four degrees after twelve hours, a rise in the pulse rate, general body ache, and a feeling of malaise; sometimes marked headache, often an exacerbation of other local tuberculous lesions, or of quiescent ones. He believes that this condition is due to the liberation during operation of a certain amount of tuberculous material into the circulation, with the production of a severe tuberculin reaction. Several illustrative cases are briefly reported.

AMERICAN MEDICINE

April, 1913.

A Study of Intestinal Stasis, with Remarks on the Uses and Application of Bismuth Meal.—A. J. Quimby states that the radiological study of the intestinal tract not only affords a convenient means of making out the size, outline, and position of the organs, but that by instantaneous exposures in rapid succession their movements can be recorded and by stereoscopic plates their relation can be determined. This method of examination enables us to mark the sites at which stasis occurs and to calculate the time required for each part to perform its function and in most cases point out the character and location of the lesion causing delay. The writer finds that the average time required for a meal to pass from the stomach through the small intestine to the cecum and transverse colon is about six hours; any delay beyond this is considered as stasis, and for convenience he would designate the amount of stasis under four or more general terms. If the bismuth meal remains in the ileum more than six and less than eight hours, he would call it stasis of the first degree, from eight to ten hours, the second degree, from ten to twelve hours, the third degree, and from twelve on, the fourth degree. As such important data may be safely and easily obtained, the writer suggests that it should be a routine practice to examine all chronic cases where the symptoms may be referred to disturbance of the gastrointestinal functions; and if generally used it will be found that ptosis is one of the most important primary factors causing stasis; that its action is largely mechanical, is automatically progressive when neglected, and is a causal factor in the development of serious complications.

Letters to the Editor.

THE VON RUCK TUBERCULOSIS VACCINE.

46 Reed Street, Asheville, N. C., *June 10, 1913.*

To the Editor:

It should hardly be necessary to say that the overdrawn and ofter absurd statements concerning the therapeutic possibilities of my vaccine, and concerning my hopes for the future, which have recently appeared in newspapers throughout the country, were printed without my authorization and, indeed, in opposition to my wishes.

Representatives of the press, who called on me, were al-

ways referred to my publications in medical literature, and were told that I could not, with propriety, make any statements whatever until the government investigations of the vaccine were completed and reported upon.

Since, however, the newspaper notoriety, which was thrust upon me, has evidently caused futile hopes in the minds of many consumptives, and was not always interpreted correctly by physicians, and since many consumptives come to Asheville, asking to be treated, for whom no treatment whatever can offer any chances of improvement, I have thought it proper to prepare a statement for publication in the *New York Herald*, in order to correct the mistaken ideas in the minds of people in regard to the possibilities of my vaccine. I hope that this statement will appear promptly in the *Herald*, and that it may have the desired effect. It would be useless for patients to come to Asheville for treatment without the approval of their physicians. The latter should, in all cases, communicate with me before sending patients to the Winyah Sanatorium, giving full details of their patients' conditions, and should make arrangements for their accommodation.

I should be very glad if you would publish this letter in the NEW YORK MEDICAL JOURNAL, or such portions of it as may suffice to inform the profession of my position in the matter.

KARL VON RUCK, M. D.

ATTENDANCE AT MEDICAL SOCIETIES.

AKRON, OHIO, *June 12, 1913.*

To the Editor:

The statement of S. St. J. Wright, A. B., M. D., that "every man should attend his medical society" is only too true. No man is above learning much of benefit from any reputable society. No man knows enough to consider himself too good or too learned to attend his medical society. The member who never attends sooner or later becomes an object of wonder, finally of greater or less suspicion, whether justly or unjustly, among the members, no matter how fair or broad minded they be. When the senior requires an anesthetist, he thinks of the junior whom he meets at the society meetings. When the junior requires a consultant he first thinks of the senior whom he sees or hears at the same meetings.

In my official capacity as secretary of the Summit County Medical Society I was recently requested to recommend two physicians for the position of medical examiners for an important insurance company. I at once named two whom I knew, as they attend, whenever possible, the meetings of our society.

One suggestion to other secretaries: This society was organized in 1842. We have a roster which contains the names in full, birthplace, date, degrees of all kinds, location, and, in the case of the dead, the date of the death, of every man that joined this society. It forms an invaluable and most interesting book, and any secretary who will complete his society records will be well repaid for the labor by the knowledge he will acquire of his fellow members past and present.

A. S. MCCORMICK, M. D.

DIGITALIS IN MITRAL STENOSIS.

225 HENRY STREET, NEW YORK, *June 13, 1913.*

To the Editor:

Dr. Maximilian Schulman, in his article on mitral stenosis in the JOURNAL for May 31st, has this to say on its treatment:

"In the early stages these patients rarely need digitalis. When it seems that they need digitalis, then they need rest even more urgently, and it hence follows that patients with mitral stenosis should not be given digitalis, even in small doses, unless they are bedridden."

To wait with the treatment of digitalis till the patient is urgently in need of rest or is already bedridden is not proper treatment. No physician doubts the value of rest in mitral stenosis. But the majority of patients coming to the physician with this disease and showing the beginning of cardiac insufficiency are either unable or unwilling to become bedridden. Mitral stenosis is an incurable disease, and the patient cannot be kept in bed indefinitely, not even at frequent intervals. Some patients do badly when confined to bed. The majority of them are too poor to afford a long rest.

It behooves the physician to do the best he can under the circumstances. After the patient is advised against overexertion, and given instructions as to proper diet, care of the bowels, etc., it is best to give him digitalis in doses of from five to ten drops of the tincture, or else five drops of the tincture of strophanthus and ten drops of tincture of nux vomica in water three times a day after meals.

This treatment has given me excellent results in cases of mitral stenosis, while the patients could attend to their ordinary affairs with little discomfort. When digitalis is indicated it is better to begin a little too early than a little too late.

J. EPSTEIN, M. D.

Book Reviews.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

A Clinical System of Tuberculosis. Describing All Forms of the Disease. By Dr. B. BANDELIER, Medical Director to the Sanatorium Schwarzwaldheim at Schömberg, near Wildbad, and Dr. O. ROEPKE, Medical Director to the Sanatorium for Railway Workers at Stadtwald in Melsungen, near Cassel. Translated from the Second German Edition by G. Bertram Hunt, M. D., B. S., Late Physician to the Scarborough Hospital. New York: William Wood & Co., 1913. Pp. xii-526. (Price, $6.)

In these days of ponderous medical volumes and voluminous compilations, mostly bibliographical in character, it is distinctly refreshing to see a compact volume of 526 pages, presenting in an authoritative manner all the essential facts about tuberculosis in its various forms. The authors, both medical directors of tuberculous sanatoriums, show an intimate knowledge of the subject from first hand, and, in addition, possess a style which excels in terseness and clearness the usual run of medical works on special subjects.

The arrangement of the various topics adds greatly to the value of the book, not only as a work of reference, but particularly as a text book for general practitioners and the medical student. Following the two chapters on the etiology, pathology, symptoms, diagnosis, prognosis, treatment, and prophylaxis, there is a very satisfactory and authoritative discussion of tuberculosis of the pleura, the upper air passages, the digestive organs, the urogenital organs, the vascular and lymphatic systems, the skin, the organs of locomotion, the nervous system, the eye, and the ear, miliary tuberculosis, scrofula, and tuberculosis in children. The chapter on diagnosis is particularly lucid and up to date. It is to be regretted, however, that, in the recording of signs graphically, the author adopted their individual scheme, unlike any other. In this particular instance originality is rather a drawback, since a variety of the recording schemes is confusing and impairs, if not nullifies, their usefulness. It is well nigh time that a uniform scheme of recording signs be adopted by all. We were sorry to see that no mention is made of American sanatoriums and the splendid results obtained in our larger institutions. Also, that while several of the European health resorts are discussed, none of the American resorts are even mentioned. This serious omission should be corrected in the next edition. The illustrations, many of which are in color, are admirable, and the general make up of the book leaves no room for criticism. We recommend this work to our readers.

The Surgery of the Skull and Brain. By L. BATHE RAWLING, F. R. C. S., Surgeon with Charge of Out Patients, St. Bartholomew's Hospital, etc. London: Henry Frowde and Hodder & Stoughton; New York: Oxford University Press, 1912. Pp. xi-340. (Price, $6.)

This book gives in a most complete form the most modern facts and methods of procedure in craniocerebral surgery. It is a most difficult task to compress into such small space so large a subject as this has become in the past few years. There have been so many conflicting theories in regard to the mechanism of fractures of the

skull, concussion, and compression, so many methods of operative interference, hemostasis, etc., and so much discussion as to indications for operation for intracranial injury and disease, that a large work would be necessary to even outline all that has been written. The writer has been very successful in eliminating all that is unessential to a clear description of the present aspects of the surgery of the skull and brain. The theories regarding cerebral injury are those now most generally accepted, the operative technic described is chosen from the work of the best clinicians in Europe and America, and the indications for operating in the various intracranial lesions represent the generally accepted ideas of the best conservative surgeons specializing in this field. The book is written in excellent English, the illustrations and diagrams are clear and satisfactorily descriptive, and the publisher has made an unusually attractive volume. It can be recommended not only to the specialist but also to the student and the general surgeon who wishes to familiarize himself with the most up to date practice in this most progressive realm of surgery.

Tuberculin in Diagnosis and Treatment. By Francis Marion Pottenger, A. M., M. D., LL. D., Medical Director of the Pottenger Sanatorium for Diseases of the Lungs and Throat, Monrovia, California. With Thirty-five Illustrations, Including One Plate in Colors. St. Louis: C. V. Mosby Company, 1913. Pp. 243. (Price, $3.)

In this book Doctor Pottenger gives a very complete presentation of this much discussed subject. He feels that the testimony given by both clinical observation and laboratory technic afford ample justification for the belief that the theory of the action of tuberculin is supported by the practical results. The material is presented in a clear and interesting manner, and attention is called to various points that are not infrequently overlooked. In regard to the size of the dose, Pottenger condemns the giving of small doses which are increased slowly with long pauses between them, as this method favors oversensitiveness (serum sickness). He recommends beginning with small doses and, with short intervals, increasing the dose rapidly so as to prevent oversensitiveness. He also holds that cases of mixed infection can and should be given the tuberculin treatment. The various tuberculin tests are set forth in much detail and considerable space is devoted to the technic of administering tuberculin. In an appendix is given a translation of Koch's first paper, in which he reports his results from the use of this new substance. It is a model of modesty and reserve. This book is a very good one and can be recommended.

The City That Was. By Stephen Smith, A. M., M. D., LL. D. New York: Frank Allaban, 1911. Pp. 211.

The author filled the position of commissioner of the Board of Health of New York for over eight years, and during this long period he gained an insight to conditions which seem to us to have been impossible to exist. There is hardly a department in the great city of New York that deserves as much credit as the Board of Health. It has been exempt from the degrading influence of graft and corruption, and its officers have, without exception, strictly adhered to the one aim to make New York a healthy city. Much is still to be done, but that is not the fault of the department. The book is very instructive and should find many readers, for it well deserves a wide circulation.

Meetings of Local Medical Societies.

Tuesday, *June 24th.*—New York Psychoanalytic Society; Alumni Association of Seney Hospital, Brooklyn; Valentine Mott Medical Society, New York (annual); Washington Heights Medical Society; Rome Medical Society; Buffalo Academy of Medicine.

Wednesday, *June 25th.*—Medical Union, Buffalo.

Thursday, *June 26th.*—New York Physicians' Association; Bronx Medical Association; New York Celtic Medical Society.

Friday, *June 27th.*—Audubon Medical Society; Italian Medical Society of New York.

Official News.

United States Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending June 11, 1913:

Francis, E., Surgeon. Directed to proceed to Texarkana, Tex., to investigate an outbreak of poliomyelitis prevailing there, and to advise with the State and municipal authorities as to measures for its control. **Hooper**, L. E., Assistant Surgeon. Directed to report to the commanding officer of the revenue cutter *Thesis* at San Francisco, Cal., not later than June 20th, for duty during the northern cruise of that vessel. **Kerr**, J. W., Assistant Surgeon General. Detailed to represent the service at the annual conference of State and Provincial Health Officers of North America, to be held in Minneapolis, Minn., June 14, 1913; and to make arrangements for holding the sessions of the eleventh annual conference of State and Territorial Health Authorities with the United States Public Health Service, June 16, 1913, and act as secretary in the conference; also detailed to represent the service in the House of Delegates of the American Medical Association to be held in Minneapolis, Minn., June 17 to 20, 1913. **King**, W. W., Surgeon. Leave of absence for three months from March 15, 1913, amended to read "three months' leave of absence from April 16, 1913." **Kucera**, J. F., Acting Assistant Surgeon. Granted thirty days' leave of absence, without pay, from May 1, 1913. **McMullen**, John, Surgeon. Detailed to attend the eleventh annual conference of State and Territorial Health Authorities with the United States Public Health Service to be held at Minneapolis, Minn., June 16, 1913; also to represent the service at the annual meeting of the American Medical Association to be held in that city, June 17 to 20, 1913. **Markoe**, W. W., Acting Assistant Surgeon. Granted one month's leave of absence, without pay, from May 1, 1913. **Nute**, A. F., Acting Assistant Surgeon. Authorized to visit charitable institutions in Boston, Mass., and vicinity, for the examination of aliens who are liable to deportation. **Rucker**, W. C., Assistant Surgeon: Detailed to attend the eleventh annual conference of State and Territorial Health Authorities with the United States Public Health Service to be held at Minneapolis, Minn., June 16, 1913; also to represent the service at the annual meeting of the American Medical Association to be held in that city June 17 to 20, 1913; also en route to station at Washington, D. C., to attend the annual conference of State and local health authorities of Kansas at Lawrence, June 24 and 25, 1913. **Trask**, J. W., Assistant Surgeon General. Detailed to attend the eleventh annual conference of State and Territorial Health Authorities with the United States Public Health Service, to be held at Minneapolis, Minn., June 16, 1913; also to represent the service at the annual meeting of the American Medical Association to be held in that city, June 17 to 20, 1913. **Weldon**, W. A., Acting Assistant Surgeon. Granted sixty days' leave of absence, without pay, from June 8, 1913.

Board convened.

Board of commissioned medical officers convened to meet at the bureau on the call of the chairman for the physical reexamination of a cadet of the Revenue Cutter Service. Detail for the board: Assistant Surgeon General W. J. Pettus, chairman; Passed Assistant Surgeon H. J. Warner, member; Assistant Surgeon R. A. Kearney, recorder.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Department of the United States Army for the week ending June 14, 1913:

Banta, William P., Captain. Upon arrival in the United States and upon the expiration of the leave of absence heretofore granted him will proceed to Fort McPherson, Ga., and report in person to the commanding officer of that post for duty. **Browne**, Rhoderic W., Lieutenant, Medical Reserve Corps. Upon arrival in the United States will proceed to Fort Dade, Fla., and re-

port in person to the commanding officer of that post for duty. **Dickenson,** Clarence F., Lieutenant, Medical Reserve Corps. Relieved from active duty in the Medical Reserve Corps on arrival at his home, Berkeley, Cal. **Drake,** P. G., Lieutenant, Medical Reserve Corps; ordered to Fort Andrews, Mass., for temporary duty, about June 16th. **Dunbar,** Lee R., Captain. Relieved from duty at the Letterman General Hospital, Presidio of San Francisco, Cal., and will proceed to Fort Leavenworth, Kansas, and report to the commandant, U. S. Military Prison, for temporary duty and on completion of this duty report to the commanding officer of Fort Leavenworth for duty. **Edwurzel,** G. M., Major. Granted ten days' leave of absence from June 26th. **Ferenbaugh,** Thomas L., Lieutenant. Relieved from further treatment at the Walter Reed General Hospital, District of Columbia, and from duty at Fort Sill, Okla., in time to comply with this order, and will sail from Seattle, Wash., on or about July 10th for Fort St. Michael, Alaska, for duty, relieving First Lieutenant Clemens W. **McMillan,** who upon being thus relieved, will proceed to Seattle, Wash., and report by telegraph to the Adjutant General of the Army for further orders. **Hall,** William E., Lieutenant. Relieved from duty at Fort Winfield Scott, Cal., to take effect upon the arrival at that post of Captain Ernest G. Bingham, and will then proceed to the Letterman General Hospital, the Presidio of San Francisco, Cal., and report in person to the commanding officer of that hospital for duty. **Hill,** Eben C., Captain. Will report to Brigadier General Albert L. Mills, president of the army retiring board at Washington, D. C., at such time as he may designate for examination by the board; upon completion of his examination, will return to the place of receipt by him of this order. **Kraker,** David A., Lieutenant, Medical Reserve Corps. Ordered to active duty for a period from June 28th to July 10, 1913, and will proceed to Gettysburg, Pa., for duty with the provisional field hospital to be established at that place. **Lambie,** John S., Jr., Captain. Relieved from duty at Fort Myer, Va., to take effect at such time as will enable him to comply with this order and will proceed to Fort William H. Seward, Alaska, sailing from Seattle, Wash., about July 10, 1913, for duty, relieving Captain Ralph S. **Porter,** who upon being thus relieved, will proceed to Seattle, Wash., and report by telegraph to the Adjutant General of the Army for further orders. **Meister,** William B., Lieutenant, relieved from further temporary duty at Texas City, Texas, and from duty at Fort Benjamin Harrison, Indiana, in time to comply with this order, and will proceed to Fort Davis, Alaska, sailing from Seattle, Wash., on or about July 10, 1913, and report in person to the commanding officer of that post for duty and by letter to the commanding general, Western Department, relieving First Lieutenant Horace M. **Reberson,** who upon being thus relieved, will proceed to Seattle, Wash., and report by telegraph to the Adjutant General of the Army for further orders. **McMillan,** Clemens W., Lieutenant. Granted leave of absence for one month on arrival in United States. **Page,** Henry, Major. Granted leave of absence for four months on surgeon's certificate of disability, with permission to go beyond the sea; upon the expiration of this sick leave of absence, will proceed to the Walter Reed General Hospital, District of Columbia, and report to the commanding officer for further observation. **Richardson,** W. H., Captain. Detailed as inspector instructor with California Militia July 5th to 19th at Fort Winfield Scott, California. **Snow,** Corydon G., Captain. Upon arrival in the United States will proceed to the Letterman General Hospital at the Presidio of San Francisco, Cal., and report in person to the commanding officer of that hospital for duty. **Snyder,** Craig R., Captain. Upon arrival in the United States will proceed to Columbus Barracks, Ohio, for duty. **Truby,** W. F., Major. Sick leave already granted extended three months. **Waring,** J. B. H., Captain. Granted leave of absence for two months on surgeon's certificate of disability.

By direction of the President, Colonel Charles Richard and Captain William A. Wickline are detailed as members of the army retiring board, appointed to meet at Washington, D. C., by paragraph 14, Special Orders No. 14, January 17, 1913, War Department, vice Colonel Louis A. LaGarde, retired, and Captain Louis C. Duncan, hereby relieved.

A board to consist of Major Bailey K. Ashford, Medical Corps, is appointed for the purpose of studying tropical diseases as they exist in Porto Rico, and will be governed in the investigations by such instructions as may be received from the Surgeon General of the Army. Major Ashford is relieved from duty with troops at San Juan, P. R., and will take station at that place for the purpose indicated.

Each of the following named officers of the Medical Reserve Corps, recently appointed, is ordered to active duty in the service of the United States on account of an existing emergency and will proceed to the post specified after his name for duty: First Lieutenant Coleridge L. Beaven, Fort Howard, Md., and First Lieutenant William W. Vaughan, Fort Myer, Va.

Each of the following named officers upon arrival in the United States will proceed to the post specified after his name and report in person to the commanding officer thereof for duty and by letter to the commanding general, Western Department: Captain Ernest G. Bingham, Medical Corps, Fort Winfield Scott, Cal.; Captain Orville G. Brown, Medical Corps, Fort Worden, Wash.; Lieutenant Charles H. Stearns, Medical Reserve Corps, Fort Ward, Wash.; and Captain Haywood S. Hansell, Medical Corps, who will report in person to the commanding general, Western Department, for assignment to duty as attending surgeon and medical superintendent, Army Transport Service, San Francisco, Cal.

Births, Marriages, and Deaths.

Married.

Babcock—Losee.—In Adams Centre, N. Y., on Wednesday, June 4th, Dr. Earl Erret Babcock and Miss Lena Belle Losee. **Carmelia—Brownback.**—In Washington, D. C., on Thursday, May 8th, Dr. Francis Albion Carmelia and Miss Sara Ellis Brownback. **Guy—Price.**—In Pittsburgh, Pa., on Wednesday, June 4th, Dr. William Harvey Guy and Miss Mary Emma Price. **Kendig—Yates.**—In Kenbridge, Va., on Thursday, June 5th, Dr. Walter D. Kendig and Miss Helen Murray Yates. **Killips—Coon.**—In Lyons, N. Y., on Wednesday, June 4th, Dr. Thomas A. Killips and Miss Mary Louise Coon. **Laslie—Cobb.**—In Montgomery, Ala., on Wednesday, June 4th, Dr. Carney Graham Laslie and Miss Isabel Cobb. **Lockwood—Dobel.**—In Montreal, Canada, on Thursday, June 5th, Dr. George Roe Lockwood, Jr., of New York, and Miss Louisa Anne Dobel. **Norton—Hendrickson.**—In New York, on Saturday, June 7th, Dr. Rupert Norton, of Baltimore, and Miss Cecelia Hendrickson. **Stewart—Raiche.**—In Minneapolis, on Wednesday, June 4th, Dr. J. Clark Stewart and Miss Isabelle Raiche.

Died.

Adams.—In Crewe, Va., on Saturday, June 7th, Dr. E. T. Adams, aged seventy-five years. **Baltzer.**—In Hickman, Ky., on Sunday, June 8th, Dr. L. P. Baltzer. **Bolton.**—In El Paso, Tex., on Tuesday, June 3d, Dr. William Stroud Bolton, aged fifty-four years. **Evans.**—In Pittsburgh, Pa., on Friday, June 6th, Dr. Roscoe Evans, aged thirty-eight years. **Finney.**—In Cape Giradeau, Mo., on Sunday, June 1st, Dr. J. M. Finney, aged sixty-one years. **Laverne.**—In Senatobia, Miss., no Thursday, June 5th, Dr. Don C. Laverne. **McFarland.**—In Irondale, Mo., on Friday, June 6th, Dr. William E. McFarland, aged forty-seven years. **McPhee.**—In Anthony, Kansas, on Sunday, June 8th, Dr. W. D. McPhee, aged forty-five years. **Miller.**—In Lancaster, Pa., on Sunday, June 1st, Dr. Amos B. Miller, aged sixty-nine years. **Neff.**—In Baltimore, on Thursday, June 5th, Dr. John Neff, aged eighty-one years. **Smith.**—In Reading, Pa., on Tuesday, June 3d, Dr. A. S. Smith, aged seventy-three years. **Snow.**—In Belmar, N. J., on Thursday, June 12th, Dr. Harry E. Snow, aged fifty-five years.—**Snyder.**—In Louisville, Ky., on Thursday, June 5th, Dr. Nicholas S. Snyder, aged sixty-two years.

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GENERAL PRINCIPLES OF THE SURGICAL TREATMENT OF CANCER.*

By JOHN A. HARTWELL, M. D.,
New York,
Surgeon to Bellevue Hospital; Assistant Surgeon to Presbyterian Hospital, etc.

The experimental studies on cancer which are being so extensively conducted in nearly every medical centre of the world give rise to the hope that at some time there may be a means other than surgical excision for treating the disease. This hope, however, must not obscure the fact that at the present time the only treatment which is effective is an operative procedure. The degree of effectiveness which this treatment yields is based on well defined principles, and it is with these that we are immediately concerned.

The fact of prime importance is, that in its incipiency cancer is a local lesion. Whatever may prove to be the predisposing or exciting causes which lead to the uncontrolled and lawless growth of cells, which is typical of cancer, these causes always primarily act on a localized area, and are neither generally nor widely distributed, as is the pathogenic factor in so many diseases. In the early stages, too, the growth is entirely by continuity. Hence there must be a time in its life history when every cancer is amenable to complete eradication, unless it is placed in such a region that its inaccessibility renders this technically impossible. Since, however, the growth is uncontrolled and lawless, it follows that sooner or later the disease ceases to be a localized lesion, and at that stage its complete eradication is not a possibility. This statement ignores the rare instances in which the cancer cells seem to find a host sufficiently resistant to destroy them. Such instances are of vast importance to the investigator who is striving for some means, other than mechanical, for the treatment of the disease, but their rarity deprives them of any practical bearing on the question of the principles of surgical treatment. Fortunately, cancer attacks with the greatest frequency the stomach, the uterus, the rectum, and the large and small intestine, the female breast, and the structures in and around the mouth, about in the order named. It is comparatively rare, as a primary lesion, in the pancreas, the liver, the brain, and the lung. From this it is seen that in a majority of cases cancer occurs in an accessible region, and patients suffering from it in every one of these regions have been successfully and permanently cured by the surgeon. It is beyond question that surgery does afford a cure for cancer in a very large number of cases, and yet the death rate from this disease is enormous, and apparently on the increase. There are four reasons for this deplorable state of affairs. First, the carelessness and ignorance of the medical profession; second, the carelessness and ignorance of the laity; third, the inherent difficulties in diagnosticating many cancers in the early stage, even by the greatest care on the part of the most trained observer, and fourth, the fact that surgery has yet much to learn concerning the overcoming of the difficulties which surround the complete eradication of the disease, even in the early stage. Failure here is by no means a rarity.

That the first two factors, carelessness of the profession and the public, are important, is proved beyond dispute by the following figures. The Pennsylvania Cancer Commission, in an investigation of 400 cases reported from individual physicians and surgeons throughout the State, found that superficial cancer had been apparent on an average of eighteen months before the patient came to the surgeon. Eleven months had elapsed between the time a physician had been consulted and the date of operation. In deep cancers this time was one year. In about one case in thirty of breast cancers, the patient was not even examined by the first physician consulted, and in one case six, salves, ointments, etc., were prescribed with advice to temporize. Sixty-eight per cent. only, of the cases of superficial cancer were operable when they were seen by the surgeon. The figures in stomach cancer and uterine cancer were even more emphatic in their condemnation. Only forty-eight per cent. of deep seated cancers were operable when first seen by the surgeon. The following data show that our own community is equally open to criticism. The records of one of the large hospitals in New York city, for the period from 1905 to 1910, show that sixty patients suffering from pyloric carcinoma were admitted to the surgical division. Ten of these had been in some hospital previously for the same condition; seventeen had been suffering from well pronounced gastric symptoms for one year or more, and six others for six months. Of these sixty cases, forty-five were operated in with the following results: Thirty-eight, or over sixty-three per cent., were found totally inoperable, so far as removing the growth was concerned. Only seven were deemed

*Read before the Medical Society of the County of New York, March 23, 1913.

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suitable cases in which to attempt the removal of the disease by a partial gastrectomy, and in favor of these the lesion had advanced so far that death resulted. Eight were considered inoperable from the clinical examination. Four patients refused operation, and two in whom the diagnosis seemed certain improved sufficiently under hospital treatment to be discharged without establishing a positive diagnosis by an exploration. In other words, only three patients out of fifty-four (we exclude the patients refusing operation and those in whom the diagnosis was in doubt) were really proper subjects for the application of the only curative treatment for cancer which is at present known. There were admitted to the medical wards fifty-three patients in whom a diagnosis of carcinoma of the pylorus had been made. Eight of these were included among the surgical cases, having been transferred to that division, and at operation in only one case was the growth found to be sufficiently limited to warrant a radical removal. The remaining forty-five patients were not operated upon. Nineteen of these died in the hospital, thirteen were discharged unimproved (presumably considered inoperable), eleven were discharged improved, and two were discharged as cured, that is, the symptoms were not in evidence and the diagnosis was in doubt. There were, therefore, one hundred and two patients suffering from pyloric cancer admitted to the hospital during a period of five years, and only three were successfully treated by the radical removal of the disease, and, what is worse, only ten were in condition for such treatment to be attempted. On the other hand, fifteen patients were admitted with the diagnosis of gastric cancer, and were discharged without any treatment other than routine hospital care, under which they improved. The outcome of these cases we have not been able to ascertain, but from the fact that of the advanced cases, ten patients had previously been in a hospital and discharged improved, it is fair to assume that many of these fifteen went the same way. The following case will illustrate this:

A man sixty-two years of age was admitted to the medical wards showing evidence of advanced pyloric obstruction. Under palliative treatment he improved markedly and his discharge was contemplated. He, however, asked to be operated upon. He said he had been in various hospitals eight times in six years, suffering from the same condition, and that each time he had been apparently cured, only to relapse later. Operation was performed, and a large indurated mass was found involving the pylorus, suggesting the diagnosis of cancer, secondary to an ulcer. A radical operation was performed, marked adhesions making it a very difficult procedure, and the result was death. This man, through neglect, had been deprived of the benefit of a needed operation for some years. Had he been operated upon earlier, the outcome might readily have been successful.

An illustration from personal experience may be found in the case of a patient who was under the care of an excellent physician, by whom he was referred to a prominent gastrologist. The symptoms of serious gastric disturbance, with loss of weight, were assigned to a gastric neurosis due to overwork. He was advised to take a long rest, preferably traveling abroad. Less than a week later, and just prior to his expected sailing, he was attacked with acute abdominal symptoms, for which an immediate operation was necessary. An inoperable carcinoma of the pylorus was found. There is no justification in our thus temporizing with a disease that inevitably proves fatal if left alone; it is done in violation of every therapeutical principle. Every patient which presents symptoms which make the diagnosis of a deep seated cancer seriously to be considered, is entitled to, and should have urged upon him, the exploratory operation. The time may arrive when laboratory tests, the use of the gastroscope, the x ray and other methods will make the suspected but not determined cases much less numerous than at present. Until this time arrives an actual inspection is necessary.

If my audience is in doubt as to the possibilities of a cure of gastric cancer, by any means, and under any conditions, I would refer you to the following statistics, tabulated by Dr. Charles Martin, in *Osler's Practice*. Gastrectomy was first successfully performed by Billroth in 1881, when a partial operation was done, while the complete removal of the stomach was first attempted in 1883 by Connor, of Cincinnati, who, although unsuccessful, paved the way for the later good results of Schlatter, who, in 1897, performed a complete gastrectomy with recovery. H. J. Paterson collected some statistics on gastrectomy up to 1905: twenty-seven cases had been operated in for complete removal; ten of these patients were alive and well at varying periods up to eight years after operation (eight, seven, five, four and three quarters years respectively, and two others for a somewhat shorter time). Ten others had died, of whom three had lived more than one year (i. e., mortality thirty-six per cent.). Twenty other cases were recorded, in which subtotal gastrectomy (i. e., leaving a portion of the fundus) was performed, and of these patients only six had died (mortality thirty per cent.), while all the others had lived, and nine of them had survived the operation for from two to eleven years. Paterson's statistics include, further, fifty-five cases of partial gastrectomy (i. e., removal of the pylorus and usually the lesser curvature). Of these, fourteen per cent. of the patients have been cured, having survived the operation without recurrence (one fourteen years, one seven and a half years, two six years, one five years, two four years, all well; one four and one half years, but with suspicion of recurrence). Mayo quoted MacDonald as having found forty-three undoubted cures from operation. Kocher, in May, 1907, reported ninety-five cases, in which thirteen of the patients were well, and four others, although cured of cancer, had died later from other diseases, i. e., a total of seventeen (19.3 per cent.) cured. Le Riche has recently tabulated cases in which eighty-nine cancers with gastrectomies were cured for a period varying from five to sixteen years. Of these, one patient had survived sixteen years, thirty-four from five to ten years, and five at least ten years. These cases include all kinds of cancers anatomically, mostly from the pyloric region, but one of them at the cardia. In a total of thirteen hundred and sixty-six collected gastrectomies for gastric cancer, the mortality was twenty-five per cent. Peterson and Colmers recorded thirty cases, with twenty per cent. of cures (Lisbon Congress), adding that all these patients were then in good condition, "performing ordinary daily work with no gastric complaints, with

an easy digestion, and that even the distaste for fats and meats had disappeared."

With results such as those mentioned above actually accomplished, it is little less than criminal that in this city of the patients with gastric cancer, admitted to a general hospital, only one out of thirty reached the surgeon's care early enough to allow of his being permanently helped. What causes are at work to produce such a state of affairs? Difficulties in diagnosis are responsible for a part of it. Carelessness and a spirit of *laissez faire*, which, translated, means laziness and possibly ignorance, are more potent, however. Difficulty in diagnosis is not a sin; it is a misfortune. On the other hand, carelessness, laziness, and ignorance are sins, and it is appalling that we should allow ourselves to be guilty of them. It is hard to believe that any medical student can get through the routine of a medical education and not thoroughly *know* the danger of cancer, and the insidious way in which it fastens itself on an otherwise healthy individual. He may, however, readily find insurmountable difficulties in making an early diagnosis in deep seated cancer, and for this some excuse is possible. But when a patient tells a physician or surgeon that she has a lump in the breast, and he does not examine it, or, examining it, fails to take measures to positively diagnosticate it, he is guilty of criminal carelessness. If a man presents himself with a chronic ulcer on the lip, which has proved itself obstinate to home remedies, and the doctor cauterizes it, or prescribes irritating salves, this doctor is equally culpable. We have no right to be cautious in our self criticism for such things. Let us come out frankly and acknowledge our weak spot. A knowledge of it will be the first step toward remedying it. The campaign inaugurated by the surgical congress at its recent meeting in this city, for education on the subject of cancer, is a step already taken. It is only a few years ago that the general ignorance of tuberculosis was collossal. An educational campaign relative to this disease has resulted in a great dissemination of knowledge concerning it, and now no physician would dare to neglect a physical examination when a patient consulted him because "consumption" was feared. We may hope for similar results so far as cancer is concerned, but the campaign must be energetic and continuous, and must be primarily directed toward an improved condition of affairs in our own ranks. You may feel that we are departing from our subject, the principles of the surgical treatment of cancer; reflection, however, will show that this is not true, for the principle of all importance is based on the fact that cancer is at first a local disease, and is then curable, while later it is neither. Therefore, we make this emphatic appeal for the exercise of every diagnostic aid, including exploratory operation if need be, for its early recognition.

A second principle, of hardly less importance, rests on the fact that certain lesions may be transformed from a benign into a malignant character. The Pennsylvania Commission found that thirty-nine per cent. of superficial cancer, and forty per cent. of the deep seated, could be so considered. Notable examples of these are seen in the leucoplakia of the tongue, the chronic ulcer on the lip, the pigmented mole, the chronic pyloric ulcer, the colonic diverticulum, and possibly most important of all, the chronic cystic mastitis or abnormal involution of the breast. Abundant experience has proved to the satisfaction of every surgeon and pathologist that every one of these conditions has changed from a benign to a malignant growth. Why, then, are they persistently treated as the former until the latter has developed? Because the physician temporizes, and the patient dreads a surgical procedure. If, however, the physician will learn this pathological lesson, and explain to the patient that surgery in a much more dreadful form is the outcome of a waiting policy, we venture to affirm that a much larger number than at present will elect to have the early operation. There have come under my personal observation, within the past few weeks, four hopelessly inoperable cancers of the face and mouth, which had been neglected, and all of which apparently started from insignificant lesions. One patient, at least, was in a large hospital, for another condition, when he first noted a small lump on the inside of the cheek. One of the house staff examined it, and advised him that it was of no importance. He accepted this advice, and when next seen the whole cheek and floor of the mouth were involved with tubular carcinoma. Within the month I have done a colostomy for inoperable cancerous obstruction of the rectum on a patient who has been in the hospital three times since 1909 for a so called ischiorectal abscess. A third case has recently come to my notice in which a woman was referred to a "leading" consultant internist because she recognized symptoms which she thought indicated a rectal cancer. She was assured that no possibility of such existed. Four months later she returned to learn that the rectum was the seat of an inoperable cancer. In none of these cases can the blame be placed anywhere than with ourselves, and in two of them, at least, a recognition of the possibility of a precancerous condition might have averted disaster.

We desire to make a plea that the word precancerous should find as constant a use in the vocabulary of the clinician as it has in that of the pathologist. The latter has recognized its import and its importance for many years. It signifies that change which takes place in the tissues as the earliest manifestation of a beginning epithelioma or carcinoma. It is precancerous because cancer in its general clinical meaning is not yet present, but will inevitably follow if nothing is done to stop it. Ribbert describes it exhaustively, in his book on human cancer, as being demonstrable in all cases of cancer of the skin under the term *beginnende Haut Karzinome*, and illustrates the changes which he conceives as belonging to it, namely, a round celled infiltration of the subcutis prior to the lawless breaking out of the epithelial proliferation. Similarly in the stomach cancer he describes a very early change which cannot be properly diagnosticated as carcinoma, but which is certainly destined to become such. Ziegler says:

> A predisposition to the development of carcinoma is found in regenerative processes following the destruction of surface epithelium and glandular tissue, and these occur most frequently in old inflammatory processes that have led to the destruction of tissue. In the first place, the regenerative proliferation following the tissue injury may form the basis for an atypical malignant proliferation. In

addition, an important rôle is played by the snaring off and misplacement of epithelial cells into the neighboring altered connective tissue, a phenomenon of frequent occurrence in the healing of ulcers, the growth of epithelium over granulation tissue in tuberculosis, and in other chronic infectious granulomata in the mucous membranes, the skin, and in glands.

Adami says there are all grades of transition from the typical forms to the atypical forms, the former being benign, and the latter malignant. Bland Sutton in *Keen's Surgery,* devotes considerable space to precancerous conditions, and defines the term as being applied to "certain local conditions which clinical observation has shown to precede cancer"—a definition corresponding closely to that found in Gould's and in Stedman's dictionaries, though the latter qualifies it as "an assumed period." A recent paper by Dr. B. J. Lee, read before the New York Surgical Society and soon to appear in the *Annals of Surgery,* under the title of Epithelial Changes in Chronic Mastitis and Their Relation to the Development of Mammary Carcinoma, very ably discusses the subject of precancerous changes, using several cases as the text. He very faithfully describes the microscopical changes by which the benign grades into the malignant, and shows excellent photomicrographs demonstrating them. It may be objected that the term precancerous is badly descriptive because the condition meant is already malignant, or if not, it does not *necessarily* become so, and this position was to some extent assumed by some of those taking part in a recent discussion, who demanded to know if the tumor being described—a pyloric lesion—was or was not cancer; implying a hard and fast line of difference which could not be mistaken. This objection is not valid because no such line exists. The term precancerous is already widely used in the literature, particularly that of the pathologists, and it seems unwise to discard it for any other, as on analysis it is seen to describe a well recognized condition which cannot yet be called cancer in the clinical term, but which in nearly all cases will later become cancer. The need is not for a new name, but for a full grasp, particularly by the clinician, of the import of the one now in use. In this way many neoplasms and inflammatory conditions will be cured before they have reached the stage where a serious operation will be required, or, worse still, where even a serious extended operation will fail to cure.

The operative principles which must guide the surgeon in the management of cancer are based, first, on the fact that growth from the original focus of the tumor follows, in individual localities, definite lines, and, second, on the fact that cancer cells have an inherent vitality which makes them capable of independent growth when planted in a favorable environment. To attempt in detail, even briefly, the lines of extension in cancerous growth, as manifested in different localities and organs, would lead us on far too extensive a description. These are facts of anatomy and pathology with which the operator must minutely acquaint himself from the voluminous literature on the subject. He must then bring well considered judgment to bear on each individual case, in determining how far that particular lesion has extended along the lines of selection. There are no gross pathological changes to guide him. Active cancer cells may have readily extended far along lymphatics or fascial planes, without producing any alteration visible to the naked eye. Experience has taught in general what directions will be taken, but there is still a great dearth of knowledge as to which type of tumor is the most active in rapid and wide dissemination. We know the squamous celled epithelioma of the face is usually localized within narrow limits, and that the tubular carcinoma of the buccal cavity rapidly proliferates cells which may reach so far that even an early radical operation fails to remove them all. Between these two extremes, however, there are all grades, an exact knowledge of which is lacking. The result is that often needlessly mutilating operations are done, or, more to be regretted, an insufficient removal is followed by rapid recurrence. We must look to our surgical pathological laboratories to furnish the data which will make us more able to cope with this situation. Only a very careful correlation of the clinical history, the operative procedure, the exact morphology of the tumor, and the ultimate outcome of the individual case will ever solve this problem. Bloodgood, in Baltimore, has made a start in breast cancer. Every surgeon should see to it that his clinic is organized along similar lines. By so doing a period of five years will be sufficient to collect data that will go far toward establishing the relative malignancy of carcinomata on a foundation that would add greatly to rational methods of exact operative interference. The enormous material at our disposal in this city is being largely wasted.

The fact that cancer cells possess the power of independent growth, when favorable transplanted, has one very important bearing on our operative technic. Having decided in the individual case what must be the extent of the operation, it is imperative that the removal begin at the most distant points, and proceed in an orderly manner toward the most advanced point, always avoiding any exposure of parts already involved. Moreover, rough handling must be guarded against to prevent the mechanical extension of cells to new fields. Bearing on this point, too, is the care that should be observed in making examinations, removing fragments for microscopical study, and so forth. In short, a cancer should receive the same respectful consideration for its potential evils, when roughly handled, as does a swollen gangrenous appendix, or a strangulated hernia.

We may then sum up our consideration of the principles governing the surgical treatment of cancer by emphasizing the facts, first, that cancer can be cured if operated upon early, though at present there is a frightful discrepancy, owing to needless, and often culpable, delay, between what can be done, and what is done; second, in many instances a precancerous condition exists, and the term, with a definite knowledge of its significance, should become one in general daily use by the clinician; third, the knowledge of the relative malignancy of different cancers is meagre, and this paucity could be remedied by properly organized study; and fourth, cancer cells are active entities with great potential evil, and hence should be treated in such a way as to limit their extent when once they have found a place in the human body.

27 East Sixty-third Street.

THE TREATMENT OF INFECTED AND UNUNITED FRACTURE OF THE SHAFT OF THE FEMUR.

By Raymond C. Turck, M. D.,
Jacksonville, Fla.,
Surgeon to St. Luke's Hospital.

The treatment of infected, ununited fracture of the femur presents certain features not found in ordinary closed fracture, nor in fracture where clean operative work has been done or in infected compound fractures; the essential differences being that in old infected cases we have to deal with septic sinuses, bone necrosis, usually a spreading osteomyelitis, and, what is perhaps of greater importance, confinement in bed for periods covering months instead of weeks. It is perhaps needless to comment upon the serious complications engendered by long continued recumbency with traction, splints, or casts. In children and in the aged, in addition to malnutrition, muscular atrophy and contraction, decubitus, secondary anemia, anorexia, autotoxemia, etc., there is the ever present possibility of a fatal hypostatic pneumonia.

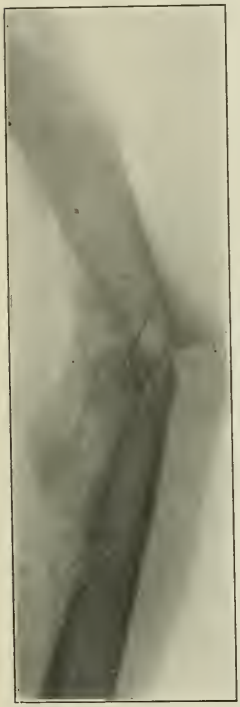

Fig. 1.—Case E. W. Ununited, infected fracture of right femur, showing inadequate silver wiring; heavy callus on internal aspect of shaft surrounds a small gauze sponge, which was forgotten and left at time of wiring operation.

Fig. 2.—Case E. W. Non-union and deformity resulting from attempting to use the Lane plate in presence of infection; necrosis about ends of bone and extending along shafts; screws loosened.

It is a sordid truth that we are beginning to have to deal with cases of primarily clean, closed fractures which have been converted into infected compound fractures by elective operation. The brilliant results obtained by clean, capable surgeons with clamps, Lane plates, medullary plugs, bone grafts, nails, wire, staples, etc., are unfortunately productive of imitation by incompetent or unclean operators, or by men who do not realize that bone and joint surgery demands a far greater nicety of technic and an infinitely greater degree of rigid asepsis than any operation in a clean abdomen, or, indeed, than in any work in the whole field of surgery with the possible exception of operations on the brain or spinal cord. Cases such as are herein presented are becoming all too frequent and are beginning to interest the legal as well as the medical profession.

Royal Whitman has beautifully brought out the reason for the final deformity in fracture of the neck of the femur and has emphasized the necessity for fixation in abduction. In fracture of the upper third of the femur the necessity for fixation or traction in abduction is practically as great as in fracture of the neck, since the powerful fibres of the gluteus medius and gluteus minimis readily overcome the upper fibres of the abductors; the result being that the upper fragment is always in abduction and cannot be drawn down to a straight line by an amount of direct traction upon the lower limb that can be borne by the patient for a long period of time. Indeed, a moment's consideration of the musculature of the thigh should convince one that a direct pull downward on the lower limb scarcely affects the position of the upper fragment, since the bulk of the resistance to the direct pull is borne by the hamstring muscles, the abductor longus, and the rectus femoris, all having their origin from the pelvis, not from the upper fragment. That portion of the quadriceps attached to both upper and lower fragments is entirely insufficient to neutralize the powerful outward pull of the abductors. If the principle of fixation or traction in abduction were more generally followed we should have less of shortening and outward deformity following the treatment of femoral fracture by the closed method, and there would be fewer cases demanding opera-

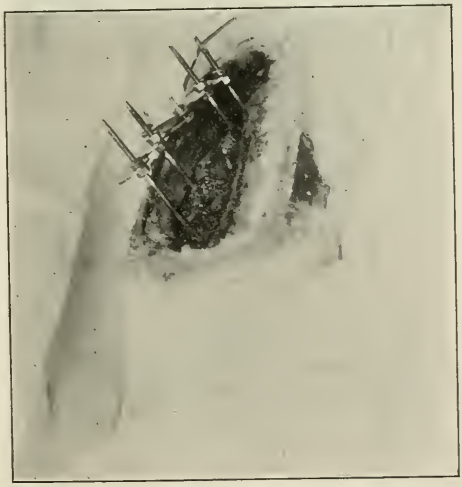

Fig. 3.—Case E. W. Thigh laid open nearly the whole length, wound packed to heal from bottom up; bone exposed and held in place by Parkhill clamp. New granulation tissue and callus may be observed along femoral shaft.

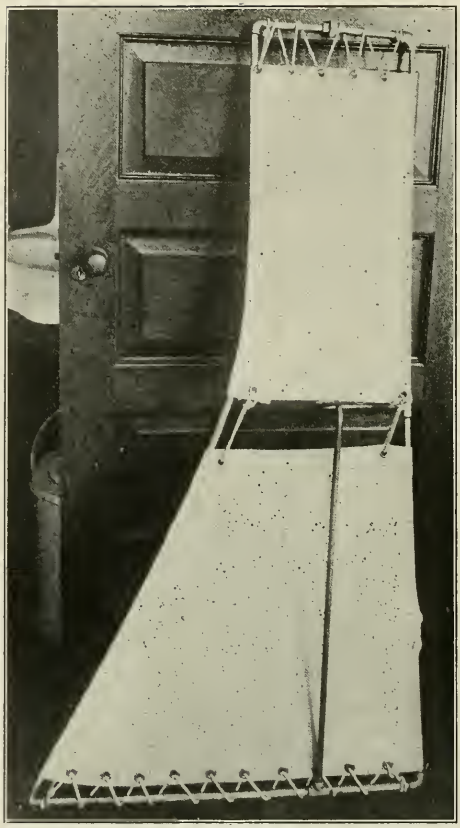

Fig. 4.—Case E. W. Showing Bradford-Whitman-Turck frame to provide traction, fixation, abduction, transportation, and the upright position; opening in canvas cover to provide for use of bed pan without moving patient.

tive correction with the possibility of adding infection to deformity.

The cases herein reported present practically all of the problems involved in the treatment of old, infected, ununited fracture, and hence are considered in detail.

Case I. E. W., a white boy, five years of age, in May, 1911, sustained a simple fracture in the upper third of his right femur. He was treated for four weeks with straight Buck's extension and a straight plaster spica. The limb was not held in abduction. Good sound union resulted, but with the outward bowing of the femur and the consequent deformity and shortening usually found in cases treated by this method. The mother of the boy, naturally, was not satisfied with the result obtained, and was persuaded by a "pseudosurgeon" that corrective work was necessary. This surgeon, not being in good standing, and not having access to a hospital, did an operation in his office with a problematical degree of asepsis. The result is shown in Figure 1. The bone evidently had been rebroken and the fragments held with a single strand of silver wire, a procedure which worked out well in the construction of an old time flail, but seems scarcely applicable to fractures in the upper third of the femur. As an additional precaution against union the wound was infected, and to complete the work, a sponge was carefully secreted behind the bone. The sponge may be noted in Figure 1 as a light area in the centre of the very unusually large and long callus. The resulting suppurating sinus was treated until the patient's money was exhausted, when the case was turned over to the Associated Charities. The wound was dressed for some months by the visiting nurse and was referred to the writer in October, 1911, and admitted to St. Luke's Hospital under the care of The Cummer Fund for Ruptured and Crippled Children. The boy entered the hospital with a suppurating sinus leading down to an ununited, infected fracture at the junction of the upper and middle thirds of the right femur. (Figure 1.)

First operation, October 26, 1911. Under ether, the sinus was dissected out, bone exposed, and the silver wire removed. The necrotic bone was curetted and the wound filled with iodoform emulsion, and packed, to insure free drainage. Later, Beck's bismuth paste was used, the plan being to subdue the infection, then correct the deformity by clean operation. The wound refused to heal and continued to suppurate.

Second operation, December 12, 1911. Under ether, opened widely and thoroughly curetted necrotic bone areas which by this time had extended in all directions; packed wound; no result.

Third operation, January 12, 1912. Nitrous oxide and oxygen anesthesia; opened widely, curetted, and made counter drainage opening in thigh posteriorly, establishing through and through drainage. Following this operation the infection extended rapidly down thigh, necessitating another operation.

Fourth operation, January 24, 1912. Ether anesthesia; split thigh anteriorly, thoroughly exposed femur, elevated bone ends through wound, cut away all of old callus, and found a foul, partly disintegrated gauze sponge imbedded in the bony callus posterior to and below the fracture; curetted all visible necrotic bone and freshened ends; four screw Lane plate applied simply as a forlorn hope; drained. Severe infection resulted promptly; Lane plate screws sloughed out quickly, throwing bone again in an-

Fig. 5.—E. W. Patient in upright position on frame, with abduction and traction, traction provided (after Gwilym Davis) by fish scale and cord and pulleys; Parkhill clamp still in place.

FIG. 6.—Case E. W. Patient on frame, now fitted with removal bicycle saddle for greater comfort when upright; Parkhill clamp removed, wound nearly healed, abduction and traction still maintained. Fixation provided by molded telegraph wire splint. Adhesive traction straps removed, cord fastened to screw eye in heel of an ordinary shoe.

gular deformity (Figure 2); wound laid open and packed without anesthesia; osteomyelitis extending almost entire length of femur; pus broke through popliteal space.

Fifth operation. March 18, 1912. Nitrous oxide-oxygen-ether anesthesia; split thigh anteriorly nearly whole length; removed loose plate and screws, curetted, freshened ends, straightened thigh and applied a Parkhill clamp. Drained opening in popliteal space; anterior wound packed widely open with iodoform gauze; limb placed in iron reinforced abduction plaster spica with windows for dressings (Figure 3). Daily dressings and repacking until April 15, 1912, when the wound and bone were beginning to cover with clean, healthy granulations. The posterior opening had closed. The boy's general condition, however, was very bad; anemic; hemoglobin fifty;

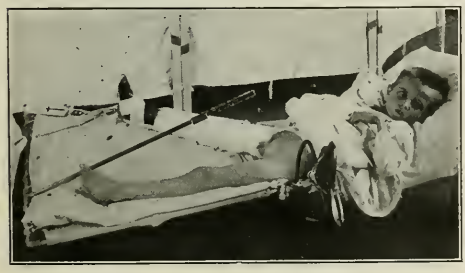

FIG. 7.—Case E. W. Showing bicycle saddle swung out of the way of the bed pan.

heart dilated; children's service reported probable beginning amyloid degeneration of liver and kidneys. Necessity for change of position, open air, and other hygienic measures being apparent, the frame shown in Figure 4 was devised. As may be seen, the frame is of the ordinary Bradford-Whitman type, except that the abduction feature is added. The iron perineal bar was divided as shown at X in Figure 5, and the ends held by a short pipe large enough to readily slip up and down the supporting bar. The perineal support was padded and used to prevent the child sliding down the frame when in the upright position or when traction was applied, and was fitted with a T on the side bar, so that the upper padded portion could be swung down and out of the way to facilitate the use of a bed pan (Figure 7). Later, at the suggestion of Miss Mary A. Baker, superintendent of St. Luke's Hospital, a child's bicycle saddle was placed on the upright perineal bar, instead of padding, to provide a greater degree of comfort when upright (Figure 6). Traction was applied after the method of Dr. Gwilym Davis by cord and pulleys, the amount of traction being regulated by an ordinary fish scale (Figure 5). The adhesive straps from which the traction pull was taken proving intensely irritating, Dr. J. Knox Simpson, at the time house surgeon of St. Luke's Hospital, suggested the use of an ordinary laced shoe with a screw eye fastened in the heel. This proved to be very satisfactory—much more comfortable than the adhesive strapping and equally as efficient (Figure 6). With open air, sunshine, and frequent change of position and scene, the child improved rapidly. The Parkhill clamp was removed May 10, 1912, and fixation of the thigh, foot, leg, and body provided with a molded adhesive covered wire splint, as shown in Figure 6. This splint, by foot fixation, also satisfactorily prevented outward rotation. The bone at this time was in apparent soft union. The wound was filling in and the bone was covered by healthy granulation. In July, 1912, the child was seized with a severe attack of measles and was sent to isolation. Daily dressings were continued until November 1, 1912, when the wound had entirely filled in and healed—bony union apparently sound. Boy was given crutches and discharged from hospital.

FIG. 8.—Case E. W. Final result; wound healed, bony union sound, one and a quarter inch shortening, function complete, knee action normal.

The final result is shown in Figure 8, taken January, 1913. Wound healed—bony union sound, but with some outward bowing of the femur due probably to too early unsupported walking It is likely that, at the time of discharge from the hospital bony union was but apparently, not actually sound. There is shortening of 1¼ inches. The function of the knee joint has been entirely regained. The child plays, runs, and jumps as well as any boy.

The teachings from this case were applied to the following similar case (C. B.), with the result that the total time required to effect sound bony union and a healed wound was but three and a half

months, as against twelve months in the case of E. W. But one operation was required in the second case, as against five in the first. The single operation, however, was radical; the thigh was split widely, the bone was thoroughly cleaned, a Parkhill clamp was immediately applied, no suturing was done either internally or externally, the wound was left entirely open and kept so by efficient packing, and drainage was absolutely free—in a word, the case was treated from the beginning rather as an osteomyelitis than as a fracture. Healing took place from the bottom with no opportunity for the imprisonment of septic foci.

CASE II. C. B., a white boy ten years of age, sustained a compound fracture of his left femur in June, 1912. A

FIG. 9.—Case C. B. Infected, ununited, overlapped, compound fracture of left femur, of four months' standing (after Lane plating and wiring), showing necrotic bone and sequestræ.

temporary splint was applied—primary dressing not known. Operation was performed the following day by a capable surgeon in Alabama. There was a great deal of injury to the soft tissues with overriding of fragments and interposition of muscle. A four screw Lane plate was applied, the wound closed with gauze drain, and the limb placed in a plaster hip spica. Four days later infection appeared, cultures of which proved to be staphylocci. Infection had evidently occurred at the time of primary injury. An x ray picture showed fragments in good position, screws apparently holding. Two weeks later the screws had loosened and the bone had become

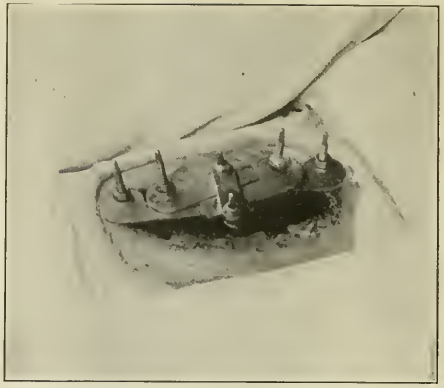

FIG. 10.—Case C. B. Wound in soft tissues opened widely for packing, Parkhill clamp approximating bone ends after resection and removal of necrotic areas.

displaced. At the second operation the surgeon removed the plate and drew the bone ends together by kangaroo tendon. Severe staphyloccus and pyocyanus infection followed. The bones again overlapped, no union resulted, and the wound would not heal.

The boy was referred to the writer in October, 1912, and was sent to St. Luke's Hospital under the care of the State of Florida Fund for Crippled Children, with a suppurating sinus leading down to an infected ununited overlapping fracture. A radiograph showed in addition, bone neurosis and sequestræ (Figure 9). Operation, October 29, 1912. Under ether, dissected out the old suppurating sinus, thoroughly exposed the bone, curetted and freshened ends, removed a piece of dead bone an inch and a half in length, carefully approximated the bone ends and held them in position with a four screw Parkhill clamp. The wound was left wide open and packed with iodoform gauze. The limb was placed in a heavily padded plaster hip spica in moderate abduction; a window being cut in the cast for dressings (Figure 10).

By December 1, 1912, the infection had practically subsided, the wound was filling by granulation under daily dressings of balsam of Peru and packing. A radiograph taken December 20th showed that the upper screws of the Parkhill clamp had loosened and that there was outward bowing of the bone. At this time the infection had disappeared, callus formation had begun, and the external wound had nearly filled in. The Parkhill clamp was removed, the bone gently straightened without anesthesia, and the limb placed in an abduction cast. The child was discharged from the hospital, February 13, 1913, with sound bony union—wound thoroughly healed. A radiograph at this time showed good approximation, with very slight outward bowing (Figure 11). The final result is shown in Figure 12.

FIG. 11.—Case C. B. Bony union sound, wound entirely healed, four months after operation.

FIG. 12.—Case C. B. Four months after operation; no apparent outward bowing, limb sound, three quarters of an inch shortening, wound healed.

FIG. 13.—Broken Lane plate, second week after operation, screws holding.

Function has been completely restored, and there is but three fourths of an inch shortening.

The necessity for adequate fixation after plating in fracture of the femoral shaft is well illustrated in the following case.

CASE III. This was a compound fracture of the femur in a powerful negro fifty-two years of age. The wound was thoroughly saturated with tincture of iodine, and immediately plated. The limb was immobilized in a long lateral heel to axilla splint. The external wound healed by first intention. During the second week the man rolled out of his bed with the result shown in Figure 13.

FIG. 14.—Ununited fracture of left femur of two months' standing, in a man sixty-eight years of age.

While such cases illustrate Mr. Lane's contention that in the first weeks, in clean cases, the plate will break before the screws give way, and are a strong argument in favor of the use of Doctor Sherman's vanadium plates, yet final x ray pictures frequently show clearly that even the vanadium plate may be inadequate if unsupported by proper fixation of the limb in abduction. Healing may be prompt and clean, but the screws may loosen before bony union is sound, the natural consequence being that the straight splint is insufficient to prevent the abductors from displacing the upper fragment with inevitable deformity and shortening.

The following case is appended as of interest in demonstrating typical deformity, nonunion, and complete loss of function following the employment of straight splints and straight Buck's extension in high femoral fracture. It is also instructive in that it shows what may be done with fracture in a patient sixty-eight years of age by clean Lane plating and fixation in abduction.

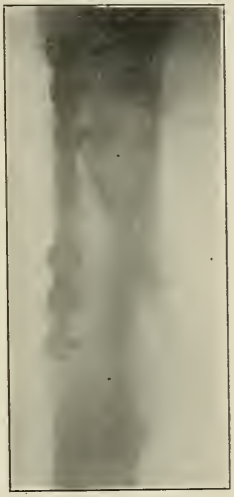

FIG. 15.—Same as Fig. 16, three months after Lane plating operation and fixation in a Whitman abduction cast; wound healed, bony union complete, function restored.

CASE IV. M. G., a poorly nourished white male, sixty-eight years of age, sustained a fracture in the upper third of his left femur in October, 1911. The limb was immobilized for nearly two months; Buck's extension in a straight line was first used, then the double inclined plane, then a straight plaster spica. A radiograph after two months showed great displacement, no union, and no callus (Figure 14). There was three inches shortening.

Operation, December 18, 1911. Ether anesthesia; an external longitudinal incision was made, and the fragments separated and everted; there was no semblance of union or callus. The bone ends were sealed over; the ends were smoothly freshened by sawing well into healthy bone; a double block and tackle were fastened to the ankle, and the patient fixed by passing a folded sheet around the groin on the injured side and tying the ends to the operating table. Traction downward drew the fractured bone into good approximation without difficulty; a Lane plate was applied, and the external wound sutured with silkworm gut. The limb was placed in a plaster spica in abduction, a window was cut in the cast, and the wound dressed on the seventh day—primary union. January 8, 1912, no pain, patient sitting up. January 18, 1912, put on new cast; bone in correct position; wound thoroughly healed. February 7, 1912, walking with crutches. February 25, 1912, union sound; strong callus; limb straight—three fourths of an inch shortening. Discharged with function restored; patient walking without cast, splint, or crutches (Figure 15).

SURGICAL LUCK.*

By J. Dawson Whitall, M. D.,
Philadelphia.

How often we hear that one surgeon is lucky; that everything he attempts has a favorable termination. Let it be said at the beginning that this article is merely a strong denial of any such thing as luck. It is only that results are watched; that the tortuous rough path by which the thing was accomplished was not seen; that diagnostic skill, the elimination of needless surgical risk, careful post-operative care, were forgotten. In short, "the stable door was locked before the horse was stolen." The constant aim of the surgeon should be the conservation of the patient's bodily resources, to increase their natural resistance. Will the risk of operation be greater than the benefit derived, is a most vital question that must be answered. He will be called upon to decide (all elements considered) if a case is operable or inoperable. Such are a few of the more important factors which must be kept in mind if one would acquire "surgical luck."

All operations may be classified under two headings—those of *election* and those of *necessity*. Under the first heading the patient may have the full benefit of a thorough preparation. The heart muscle may be brought to its highest point of efficiency with tonic doses of digitalis or strychnine. Where anemia exists, some preparation of iron may be administered, as well as eggs and milk to the point of forced feeding; thereby bringing up the vital resistance to such a pitch that there will be a rapid recovery following the operation. The kidney function may be studied, the skin and bowels made active. The operative field is prepared by scrubbing with tincture of green soap and water; it is shaved, washed with alcohol, and a sterile dressing applied. Twelve hours later the same procedure is repeated. On the day preceding the operation a calomel course is administered and enemas are given the following morning. A third scrubbing is given on the table.

On the other hand, we have in the operations of necessity no such chance for a complete preparation. The case is urgent; we have to accept greater risks; no opportunity is given to bring up the patient's vital resistance; the kidneys may be impaired, the heart muscle badly damaged; a tuberculosis may exist. Under such heading would come a perforating gastric, duodenal, or typhoid ulcer; a diffuse peritonitis from an appendicular or tubal origin; intestinal obstruction from any cause; ruptured tubal pregnancy; gallstones; empyema or gangrene of the gallbladder; acute pancreatitis.

In the operations of election the surgeon may proceed in a more or less leisurely manner—the element of time not seriously affecting the ultimate recovery of the patient. How different in the acute abdominal crises. Here, ofttimes in the presence of apparently insurmountable obstacles, one is called upon to make a rapid but careful search for an obscure lesion, which may be masked by a secondary peritonitis. Here will a man's surgical judgment be more momentous than ever before, and, as some-one has said, "the test of a surgeon's ability is not so much measured by his handling of the cases of election as by his imperative surgery." Here we have no time to give two preparations to the operative field, and the tincture of iodine stands without a peer. No scrubbing is done; the surface being merely swabbed with the full strength solution, while sterile sheets surround the patient. Dressings, utensils, instruments, catgut, and gloves must be made aseptic by the usual methods and carefully protected from contamination until required for the operation. There should be two nurses whose hands and clothing have been sterilized, one at the ligature table and the other to keep accurate record of the sponges used, which must be accounted for at the conclusion of the operation.

Preparation of the hands. The most important part is the mechanical scrubbing with tincture of green soap and *running* water for fifteen minutes. Next alcohol, ninety-five per cent. strength, thoroughly rubbed in; then rubber gloves complete this very important procedure. It will be noticed that no mention is made of either mercuric chloride or carbolic acid, it having been shown conclusively and repeatedly that in the strength used their germicidal ability is very inefficient if not nil. If the wound cavity needs flushing, only normal salt solution is used.

Assistants. A surgeon should have a first assistant who understands just what he is endeavoring to accomplish—in short, who can anticipate his next move, and who will not get in his way. He must be an additional pair of hands to the surgeon. It is, of course, only by assisting the same man for months that cooperation and coordination of thought and action become automatic, thus enabling more rapid and thorough work to be done.

Anesthesia. Let it first be said that the anesthetist must be a trained man who understands the art (for it is truly an art) of giving an anesthetic. His importance at every operation is only second to that of the surgeon. Above all, the operator must have absolute confidence in the anesthetist, for then and then only, untrammeled by the thought of how the patient is taking the ether, can the best work be done. The choice of the anesthetic is not nearly so important as the choice of the man who gives it. However, for the average patient the nitrous oxide ether sequence should be used, there being less unpleasant aftereffects from this. Cases of advanced kidney involvement, high arterial tension, and arteriosclerosis are contraindications to its use. Here chloroform is the drug of choice, though it is a much more dangerous anesthetic than the former, for the boundaries of "safe anesthesia" are much narrower than in the case of ether. Chloroform is a direct depressant to all tissue, while ether is a stimulant. We often hear the warning, "Now, be careful with the ether; the patient has a heart murmur"; yet these patients usually do well under the stimulating effects of the ether. The dangerous cases are those of myocardial involvement, fatty infiltration of the heart muscle, irregular pulse. This is the type which demands the fullest and closest attention of the anesthetist. The patient should be kept as near the "edge" as is possible, never being completely "knocked out," as evidenced by wide and

*Read before the April meeting of the Northwestern General Hospital Society, Philadelphia.

fixed pupils, lost reflexes, stertorous respirations, and cyanosis. "A minimum of ether for the maximum effect."

Use of drugs. Morphine is used extensively before operation by a number of surgeons, and, while it certainly does quiet the nervousness, the great disadvantage is that it masks the pupillary reflex, causing doubt in the anesthetist's mind as to just how deep the anesthesia is. Likewise, paresis of the gut following the operation must not be lost sight of, so that the temporary benefit derived is more than offset by the ill effect of the drug. Atropine, in 1/100 grain doses, should be used when there is much mucus. Where stimulation is needed, as is shown by a rapid, thready, compressible pulse, aseptic ergot, epinephrin or pituitrin is first administered, thereby raising the vascular tension. Next we may employ strychnine or digitalis, which will now have some effect. If there has been much shock or hemorrhage, salt solution is given intravenously; autotransfusion is practised, while the patient is surrounded with hot water bottles. While it is important to know what to do in the *treatment* of shock, it is doubly important to know what to do to *prevent* shock. 1. The patient must be well protected from draughts and kept warm with blankets. 2. As small an amount of anesthetic as possible. 3. Absolute control of hemorrhage. 4. Avoidance of traumatism such as may result from undue roughness in handling and in making traction upon gut or any vital structure. In other words, "cultivation of a wholesome respect for sensitive tissue." 5. A fair degree of rapidity consistent with careful work. Any patient who is badly shocked stands a most excellent chance for infection. Avoidance of infection may be briefly summed up in the following: 1. Thoroughness in sterilization of hands, operative field, utensils, dressings, gloves, instruments, and catgut or other suture material; 2, complete wound dryness; 3, avoidance of massed ligatures; 4, avoidance of tension in sutures; 5, avoidance of trauma.

Postoperative treatment may be said to consist of giving the patient a chance to get well; nothing being done or given unless definitely indicated. When the ether has been prolonged over an hour, lavage of the stomach is practised while the patient is still on the table. The Murphy treatment is given for from sixteen to twenty-four hours after operation, as it allays thirst and increases the kidney action, and also promotes good free drainage. Hot water (no ice) is given by mouth, in drachm doses, every fifteen minutes, six hours after operation, provided no vomiting has occurred. Morphine is given only if the patient has unbearable pain which simple remedies fail to relieve. Frequent changing of the patient's position is advised, letting him pick out the most comfortable position. It will be found that in the majority of cases a large percentage of postoperative pain is due to distention of the gut, which increases the intraabdominal pressure and thus causes increased tension of the incision. It follows that on the relief of the distention the pain disappears. There is nothing quite so effective as an alum enema, one half ounce to the quart of warm water. How strongly we are the slaves of custom is shown when on the second day a calomel course is given. But when we stop to think, with the thorough preparation and the small amount of nourishment given the first few days, there is little if any use of disturbing an otherwise perfectly normal convalescence. How often do we find that vomiting, distention and pain are all aggravated and the patient made worse by purgation. There seems almost a hysteria on the subject of moving the bowels by the third day. At any time we may give a triplex enema with good results if we find the patient beginning to absorb from the gut. Vomiting (persistent) and postoperative dilatation of the stomach are best controlled by lavage repeated as often as is necessary until these most distressing and serious symptoms are controlled. In these cases enemas (alum and triplex) are used, and with telling advantage. Where paresis of the gut is profound, hormone of the spleen is given hypodermically with good results.

Diet. As soon as the patient is able to retain water, albumen water is given every two hours; broths are gradually added, and then soft and modified soft food, unless there is some contraindication; full diet being given usually by the tenth day, when the patient is also out of bed. The patient is discharged from the hospital on about the sixteenth day.

Use of belts. Unless there has been drainage or a deep infection of the abdominal wound, no support is used. It would seem that the prescribing of belts following a clean case implies a lack of confidence in the work we have done. After a fracture has united would we use a splint for months following? Decidedly not, on account of the resultant atrophy of the muscles. Then why use a splint to the abdomen when healing has taken place? Here also would we have atrophy of the muscles following the use of belts, thereby predisposing to the very condition we seek to prevent, hernia. If a fascia has been approximated properly, and no infection has occurred, there will be no hernia. It is very necessary to keep the patient under observation for at least from six months to a year following operation, so that his general health can be brought to the highest point of efficiency. The operation is merely the first step on the long and tedious road to recovery.

In a brief article such as this (it being impossible to go into too much detail), only the more salient and vital points of the subject are brought out. In conclusion, I would say that surgical luck, *per se*, does not exist. It may, however, be acquired by returning to the fundamentals, the simplest things being often the best. Acquire the small details of asepsis; exercise common "horse sense"; work with the same assistants; eliminate needless risk; prevent shock; rule out unnecessary postoperative meddling; thereby giving the patient a *chance* to get well.

2025 Chestnut Street.

Treatment of Cutaneous Fissures.—Steffen, in *Quinzaine thérapeutique* for December 10, 1912, is credited with the following ointment for use where the skin is fissured, as in "chapped" hands:

℞ Phenylis salicylatis, ...gr. xxx (2 grammes);
Mentholis, ...gr. xv (1 gramme);
Olei olivæ, ...♏xxx (2 grammes);
Adipis lanæ hydrosi, ...℥iss (50 grammes).
Fiat unguentum.

PREVENTIVE MEDICINE IN RELATION TO PSYCHIATRY.*

By J. G. FITZGERALD, M. D.,
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An earlier communication[1] noted the fact that psychiatry was unusually fortunate in the amount of research material of very great value that was constantly being accumulated by the careful routine work of medical men in institutions for the care and treatment of the insane. At first sight this may not seem peculiar to psychiatry; further consideration, however, will lend support to the view. An analysis of many of the recent significant contributions to clinical psychiatry, and to the neuropathological conditions associated with mental diseases, will reveal the fact that such studies would have been impossible without the accumulated data of those engaged in routine ward and laboratory work. The material utilized by Kraepelin in his epoch making advances in the psychiatric viewpoint was available because intelligent observations, carefully recorded, had been made over long periods of time, and were available for analysis and compilation. Similar valuable studies in the neuropathological field have been made by Southard, through comprehensive and searching analysis of much accumulated material in the Massachusetts State hospitals. Likewise mention might be made of the work of Mott, of the London County Council's Asylum Board, who also grasped a similar opportunity.

The purpose of the present communication is not to review at great length past contributions to psychiatry, but to endeavor, if possible, to suggest a scheme whereby more valuable work may be done by a proper utilization of the available psychiatric organizations. As a preface to this, we must mention one other important contribution made by adequate investigation and by the application of the latest methods of immunity and bacteriology to the study of mental disease. Noguchi and Moore[2] have recently shown that the *Treponema pallidum* can be demonstrated in the brain in a considerable percentage of cases of paresis. This adds what we may regard as almost conclusive proof of the etiological relationship of syphilis to paresis. Thus the clinical view of Kraepelin is substantiated, and the conception of Dunlap and others that paresis and brain syphilis, though differing anatomically, are essentially one and the same process, is confirmed. This I wish to emphasize, for the reason that we all recognize the important rôle of syphilis as a fruitful source of insanity production. We have sound scientific proof of the fact that from ten to fifteen per cent. of the patients entering hospitals for the insane do so because they have had syphilis. And, further, of these patients less than one per cent. will ever recover, and in no case of paresis will the patient recover. This is a concise statement of what is believed to be true with reference to the relation of one infectious disease to psychiatry. Our knowledge of alcohol as an etiological agent is less definite, but we have more than suspicions, and, in many cases, some clinical evidences of its harmfulness. Nearly all other causative factors are not available for critical analysis, with the possible exception of heredity.

It is only through a sound knolwedge of etiology and a general diffusion of this knowledge that prevention is possible. Precise information as to the causal factors of certain mental diseases we already possess. How is it possible to obtain additional light on the subject? For this must, of course, be available before any great good can result. It is the idea of the author that a possible means of obtaining and applying such information is at hand, and in many instances already adequately organized, as will be pointed out.

While just recently committees for the study of mental hygiene have been formed, it is certain that in the past more attention has been paid to curative, than to preventive efforts, in mental diseases. Also, emphasis has not infrequently been laid on aftercare associations, when what was really required was an organization to minimize, as far as possible, the necessity for the existence of such aftercare societies. If seventy-five of every one hundred patients entering asylums and insane hospitals are doomed to remain there, then too large a proportion will never require the aid of any aftercare association. While no one questions the value of psychiatric institutes and clinics, their number is so small that, however well intentioned their efforts, much work must be left to other institutions. The recently established psychopathic hospital of the Boston State Hospital is a notable exception. There the out patient department, for example, is concerned with the study of children who are regarded as possible insane hospital inmates in their later years. Another admirable feature of this clinic is the activity of the director in the study of the problems of eugenics. Studies of this sort are most necessary, and much of the work already done has been difficult of correlation. Since the elaborate system of State hospitals, with the still more elaborate systems of history taking exist, why is it not possible to introduce the idea of prevention in conjunction with treatment? How can this be done?

Obviously, it is too late for the majority of patients who reach the hospital, but what about other members of a patient's family? Are there other possible patients in the family connection? If so, why not strive to prevent the development of such cases rather than be satisfied with the decision that there is "insanity in the family"? Often the most minute facts bearing on heredity are obtained, but how seldom they do more than help to make a complete history. If the staff of every institution for the cure of the insane in the United States and Canada were made to realize that each patient admitted, having a family history of insanity, presented a dual rather than a single problem, what good might we not accomplish! The first step would be the care and treatment of the patient already suffering from the disease, and the second, and equally or more important duty, would be the endeavor to prevent a second case of insanity developing in that same family or

*Read at the Sixtieth Anniversary of the Granting of the Charter to the Sheppard and Enoch Pratt Hospital, Baltimore, Md., May 9, 1913.

[1]Fitzgerald: *American Journal of Insanity*, xvii, No. 4, April, 1911, pp. 687-703.

[2]Noguchi and Moore: *Journal of Experimental Medicine*, xvii, No. 2, February, 1913, pp. 232-238.

connection. When an infectious disease, such as diphtheria, occurs in a family, the modern physician is as much concerned with prophylaxis as with treatment. He endeavors to cure the patient, but he also takes every precaution to prevent the spread of the infection. Why is it not possible to apply the same principle in psychiatry?

Preventive medicine should and does include all branches. The place of psychiatry is already reserved, but what activities in this direction are to her credit? The greatest possible opportunity for the application of this method in psychiatry is desirable. The elaboration of any cumbersome organization is not necessary, if those already engaged in the treatment of the insane will turn their attention to the matter. Each large community is, to-day, served by one or more hospitals. Let these hospitals be responsible for the mental health of their own community, as well as providing care and treatment for the cases of insanity that exist. Each institution, in this way, becomes, also, an institution of mental public health, and serves a more useful purpose than is possible as a curative institution alone. It is the belief of those who advocate the establishment of psychiatric hospitals that by early treatment many more cures are recorded than is possible where older methods prevail. If this is true, can we not go one step further and prevent the case developing at all? Not one of us can deny the possibility. How can we determine whether it is feasible? Simply by experiment. And I would suggest the following concrete method of obtaining experimental results:

Let it be a guiding rule for each hospital for the insane that educational work along the lines here indicated is just as important a function as the care of its patients.

Determine in the case of each new admission the facts with reference to other members of the patient's family and connection.

Ascertain whether other cases of insanity may possibly arise from this focus, and if so, undertake at once a campaign of prevention.

These endeavors partake, also, of the nature of social service, and each hospital should have a visiting nurse, who could carry into the home the doctrines enunciated by the physicians interested in psychiatry.

It is individual treatment that is of value, and such treatment along the lines indicated is only possible with the cooperation of each institution working in its own constituency.

The exercise of this new function should result in the accumulation of much valuable data which would serve to show whether these facts are really of any value in the elucidation of the problems of psychiatry. If it can be shown, for example, that even a broad educational campaign, aimed at removing possible etiological factors, actually results in no diminution in the number of cases of insanity, what possible good can result from further work along these lines? Therefore this work should serve more than its main purpose. If the time spent in gathering facts of personal and family history has no value whatever in preventive medicine, and the patient whose family history has been obtained is himself incurably insane, is it not possible that too much time is being spent in a futile fashion?

Methods in clinical psychiatry, as in other branches of medicine, quickly tend to become stereotyped, and whether any actual value can therein be shown after a period of years is often not ascertained. It is not suggested that with a better individual knowledge of each patient we are not making headway in psychiatry, because undoubtedly we are. The question is, are we making all possible progress in the direction of mental hygiene? If we are, and if psychiatrists generally are satisfied on this point, then no further effort is necessary. If, on the other hand, more work can be done; if there is still room for a broad and well developed attempt at prevention by medical men in every public and private hospital for the insane, let us seize the opportunity now. To restate the case briefly, the protocol should read something like this:

Each hospital should concern itself with the mental health of its local community.

Public lectures on methods to prevent the development of mental disease should be given.

The factors underlying the development of insanity should be explained, if possible, to the friends and relatives of patients, in the hope that further cases may not arise from the same source.

Explanation of the importance of syphilis, alcohol, and hereditary taint in the production of insanity should be offered.

The tide should be turned back as far as possible, in just the same manner as in the infectious diseases. Preventive medicine in psychiatry is as necessary as in any other field. The requisite effort can be made only by an intelligent utilization of the machinery already at our disposal.

Let us initiate the campaign, and there will be many to ascertain the results. The proposal here outlined is not entirely novel, but its wide and general application may possibly be productive of novel results, and this is the sincere hope of the writer.

HALLUCINATIONS IN PARESIS.*

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Occurring as manifestations of mental disorder, hallucinations may be grouped in three general classes, according to their frequency, prominence, and character as connoted with the type of psychotic state of which they are symptomatic. Thus, we may find them dominating the symptomatology, as in certain of the alcoholic psychoses; again, they may occur but sporadically, irregularly, and in a minor rôle, as in the manic depressive psychosis; and, lastly, they are to be noted with varying frequency and prominence in psychoses associated with certain organic brain diseases, such as senile dementia and paresis. It is with the hallucinations occurring in association with general paralysis that this paper will have to deal.

The doubts which, in the past, have been thrown about the occurrence of fallacious sensory preceptions in the paretic have given rise to considerable

*Read at the celebration of the Sixtieth Anniversary of the Granting of the Charter to the Sheppard and Enoch Pratt Hospital, Baltimore, Md., May 8, 1913.

disputation and question, with the result that a literature of large extent has already accumulated. And yet activities in this direction have been patently less intense since the advent of the aid which the laboratory offers in arriving at the diagnosis of this disease. As with the application of the x ray, the surgeon came to deem a more careful manual examination of a fractured bone of lesser importance than formerly, so with the coming of the Wassermann and Noguchi reactions and spinal puncture, the psychiatrist, in an analogous manner, became prone to overlook the importance of thorough symptomatological examinations in cases where the laboratory findings had made indubitable a diagnosis of general paralysis. Looking over the literature, one is impressed especially with the extremely discordant opinions which have been expressed relative to the frequency of the occurrence of hallucinations in paresis. However, without going into great detail, these widely variant opinions have been fairly accurately grouped under four headings.

First, paresis never gives rise to hallucinations. It is exceptional that this extreme view is taken, the majority of observers in this class contenting themselves by stating that hallucinations, although they possibly may occur, are quite exceptional and even doubtful.

Second, hallucinations encountered in the paretic occur as the result of other causes coexistent with the paresis. Of these causes, alcoholism is given first place. As we shall see later, alcohol may play an important part in the production of hallucinations in a proportion of cases, but by no means is it an exogenous agent of the importance indicated by this group of opinions.

Third, hallucinations are rare in paresis. Of the clinical types of paresis it is believed that the rare cases of the hallucinated patients will be found to occur more frequently in the depressive type of the disease than in any of the others, but that even here they are of no more than slight importance and of transient duration. Kraepelin is in accord with the opinion that hallucinations are rare in paresis, and says that sense deception plays a slight rôle in the symptomatology of the disease.

Fourth, hallucinations are frequent in paresis. This latter opinion is supported by some of the more recent writers. Tanzi believes the classical form of progressive paralysis not incompatible with hallucinations of any kind. According to Ziehen, hallucinations and illusions can be demonstrated with certainty in about a fourth of all paretic cases, for the most part, however, occurring disconnectedly and generally possessing the character of accessory symptoms.

Various other writers state that hallucinations occur in from 10.3 per cent. (Obersteiner) to 56.1 per cent. (Saury) of all cases of paresis. What explanations may be found for such divergent opinions? In the first instance, the question arises as to whether all the patients in the cases studied have been actual paretics. It is justifiable to assume a negative answer to this, because, in view of our recent knowledge, it is recognized that mistaken diagnoses of paresis have been all too frequent in the past, and difficulties associated with the recognition of some cases are still insurmountable, even in the laboratory. A second source of error may be expected in the limitation of the meaning of the term hallucination. When we get into the realm of tactile, kinesthetic, and vestibular hallucinations, and include here the hallucinatory organ perceptions, many obvious difficulties are to be met with. It is too often impossible to determine in a demented patient whether one is not merely dealing with delusional interpretations in the absence of veridical hallucinations. It does not seem probable that the stage of progression or the type of the disease could have altered the value of the general results. Also, statistical discrepancies cannot be explained as due to difference in class, sex, etc. That race may exert a most decided effect is to be made evident later in this paper.

There is also question as to which type of hallucination is more frequently met with in paresis. According to Ziehen, those of tactile sense are more often encountered, although he later admits that if these, at times rather vaguely determinable hallucinations are left out of consideration, fallacious sensory perceptions in the auditory field are most frequently to be observed. Tanzi, Ducoste, and Kraepelin agree that the auditory hallucinations are the more frequent, and such has been found to be the case in those paretics used in this study. Hallucinations of several senses may be present at the same time, most frequently those of the auditory type combined with one or more others. It has often been stated that when hallucinations are particularly prominent they owe their existence to causes other than paresis, and especially to alcoholic intoxication. As has been stated previously, it is believed that such a statement must be made with considerable reservation and cannot be accepted as a general truth.

In selecting the cases to be used in this study particular care was taken to certify the diagnosis in every instance. Aside from the fact that the patient exhibited clinically the symptomatology of paresis, only such cases have been chosen where there was a positive Wassermann reaction in both the blood and spinal fluid, together with a positive Noguchi test and pleocytosis in the latter, or cases where the diagnosis had been confirmed anatomically post mortem. In this study the clinical records have been gone over in 288 cases in which a diagnosis of paresis has been made. Of these, 190 conformed to the requirements set forth above, and these have been examined with reference to hallucinatory tendencies. Among these were 173 males, of whom forty-seven were colored, and seventeen females, of whom eleven were colored. The unusually small proportion of females is due primarily to the fact that the female population of this hospital is about one quarter of the total, and, secondarily, to the manner in which these cases were selected, in proportionately fewer females spinal fluid examinations and autopsies are made. The average duration of the disease on admission was 3.8 months. In twenty-two of the forty-six cases with hallucinations, seizures occurred, but it could not be determined that these had any direct bearing on the occurrence of perceptual disturbances.

When we look to see what proportion of paretics

are hallucinated it is found that of the 190 cases, a total of forty-six presented hallucinatory disturbances of one or more senses, i. e., 24.2 per cent. This accords closely with the experience of Ziehen, but the figure is somewhat lower than the average (thirty-six per cent.) as given by Ducoste.

As to the relative frequency of the sense involved in the hallucinatory disturbance, the auditory is by far the most frequent, hallucinations of this sense being present in every case. In twelve cases, auditory hallucinations coexisted with those of one other sense, in ten instances the second being visual, and in the other two, tactile. In four cases, three senses were involved—auditory, visual, and tactile in one; auditory, olfactory, and kinesthetic in a second; auditory, visual, and gustatory in a third; and auditory, tactile, and hallucinatory organ sense in a fourth. Of the ten instances where visual hallucinations alone were associated with the auditory, four only were very decidedly alcoholic, two cases having been admitted suffering from delirium tremens. In other instances the possible rôle of alcohol in the production of the hallucinations seems negligible, and in the two where its effect is undoubted, it is noticeable that the acute hallucinatory disturbances characteristic of the alcoholic soon gave way to a typical picture of paresis with a residue of occasional auditory hallucinations of a type seen in other paretics.

As to the clinical type of the disease and the relative frequency of hallucinations in each, fallacious sensory perceptions were found present as follows: Demential type, twenty-three cases; agitated type, thirteen cases; expansive type, eight cases; depressed and mixed types, each one case. This does not correspond with the figures of Ducoste, who found more than half of his hallucinated paretics of the sensorial (agitated) type. The question really is of little interest or importance, because the delimitation of the different types in many cases is little more than an arbitrary classification. It would appear that the general assumption that hallucinations, if they occur at all, are more apt to be present in the comparatively early stages of paresis, is to a degree warranted, and, also, that with the progression of the dementia they become less frequent and prominent, or at least because of the patient's condition are less precisely determinable and assumed through necessity and custom to be absent.

The most important feature to be brought out in this communication is the markedly disproportionate frequency of hallucinations in the white and the negro. Although among the 190 cases studied, 132 patients were white and only fifty-eight colored (negro), we found that among the latter race a total of twenty-three patients were hallucinated, or 39.6 per cent., whereas the same total number among the white patients gave only 17.3 per cent. hallucinated. Among the white patients were to be found natives of France, Denmark, Ireland, Italy, Canada, Sweden, Germany, Holland, Norway, England, and Spain, the majority, 161, of course, being natives of the United States. An entirely satisfactory explanation for this observation is not yet at hand. If it is true, as assumed by some, that the demential type of paresis is relatively more frequent in the negro than the white, one might at first glance suppose that this might offer a partial explanation of the findings. And yet when we examine the racial proportion in the different types we find of the total twenty-three of the demential type, twelve negroes; of the thirteen of the agitated type, six negroes; of the eight of the expansive type, four negroes; whereas the one mixed type was white. In other words, it is easily seen that of the different types, the racial proportion is practically one to one. Perhaps it is unfortunate that the gross findings of those cases in this series autopsied are not recorded with sufficient precision to make possible any determination of value relative to the localization and intensity grade of the paretic destructive process in the different cortical areas, and therefore one is unable to say whether in these cases, or in the paretic negro brain, as a rule, the sensory or motor areas, in part or whole, are more prone to the attack of metasyphilis. If such were the case, it would only add one more link in the explanatory chain, and leave us to deal with the assumption of some fundamental structural or functional difference in the negro brain as compared with that of the white. That there is a fundamental difference in mental development in the negro and white is recognized. The negro reaction is more controlled by feeling than intellectual effort. In the stage of development the race occupies a lower level, is nearer, it may be said, the perceptual life of a primitive people. Therefore, when disease disrupts acquired characteristics one might expect a ready return to this lower level with its more primitive tendencies. It might be noted in this connection that sex and other similar factors exert no influence upon this noted disproportion between the white and black.

Hallucinations having been noted to occur with such comparative frequency in paretics, the question arose as to whether or not this class of patients was particularly susceptible to fallacious sensory perceptual disturbances, and whether such tendency might be demonstrated experimentally. In carrying out any such experimentation with patients suffering from mental disorder, especially those in whom dementia is present, as in paresis, certain difficulties are to be expected, in that careful observation and cooperation cannot be anticipated. Therefore, the experiment must be as simple as possible, the directions brief and concise. Owing to differences in the patients, also, slight modifications must occasionally be made in the technical routine in order to cope with individual peculiarities. These few remarks will be sufficient to show that the results have not been obtained as in the psychological laboratory working with controlled and trained observers. This, however, does not vitiate the findings, and the general results are of interest.

If we adhere to the old definition of hallucination and illusion as given by Esquirol, it will be seen that these experiments have to do mostly with illusory rather than hallucinatory trends. However, it is quite generally admitted that practically this differentiation is often but vaguely possible and in many cases not at all so. Therefore, in this work no particular effort is made to distinguish hallucinations from illusions, although if this were de-

sirable it may be seen easily that we have dealt almost exclusively with the latter. Seashore has stated that it is difficult to produce hallucinations of sound experimentally in normal life because it is almost impossible to separate the required sound from other external sounds and from subjective or entotic sounds, and also because it is difficult to induce a firm expectation of the sound by circumstantial suggestion. Yet he found that of sixty attempts to produce hallucinations experimentally, thirty-four were successful, and he believed that this success was due largely to a concentration on the part of the observer of expectant attention upon the desired result.

My experiments were made with thirty-eight individuals suffering from various mental disorders, of which fourteen were paretics, and five normal individuals by way of control. These experiments were made as a preliminary measure, so that some idea of the methods to be used might be obtained for more extended observations, and there will be taken up here only the experiments dealing with sound.

In conducting these auditory experiments, a tuning fork and an Edison commercial phonograph were used. The observations were made in nearly all instances during the quiet evening hours, when extraneous sounds were at a minimum. The patient was brought into the room by the nurse and seated about twelve feet from the fork, and without being given any intimation of the object of the visit the experiment was begun. The electric fork, of fifty vibrations a second, was concealed in a desk and controlled by a rheostat, so that a steady humming sound was produced. On the phonograph cylinder were recorded in several sections sounds produced by the vibration of an induction coil, by the ringing of an electric bell, and by the tuning fork mentioned above, while at intervals blank sections were left on the cylinder; nothing to be heard on reproduction but the rubbing of the needle. The observers were in each instance seated immediately in front of the horn before the driving motor was started. Though most of the patients recognized the character and purpose of the machine, all were made to understand that it was a talking machine, a phonograph, graphophone, etc. During the experiment the observer was quite directly questioned, e. g., What do you hear? Describe the sound. Are there any voices? Is it music? Is some one singing? What do the voices say? etc. Aside from this directly suggestive questioning, the phonograph itself was of course most suggestive. Attempts were made throughout to concentrate the observer's attention upon expected sounds and words. The details of such experimentation will not be reproduced here, as only sufficient data and comment to make intelligible the character of the results obtained seem desirable at this time.

Of the fourteen paretics with whom these experiments were attempted, two were so demented that the results were of no value. Of the remaining twelve, four gave undoubted clinical manifestation of hallucinatory disturbances, in three cases auditory only, and in one, auditory as well as tactile, and those of organic sense. Of these four patients, in three, positive results were obtained. Among the eight patients who did not show hallucinations clinically the same proportion, i. e, three out of four (seventy-five per cent.) gave positive results also. The results from the phonograph experiment were more definitely positive than those with the tuning fork. In five cases positive results were obtained with the fork experiment—these individuals hearing such sounds as music afar off, a song plainly but no words; voices more or less indistinct; unintelligible, too rapid; clearly enunciated words and sentences. In one instance clinically determinable auditory hallucinations were intensified or diminished synchronously with intensification of the fork or on listening at the phonograph. In this case, hallucinations coming from the ventilator found their source of origin changed to the fork or the phonograph whenever these instruments were started. With the phonograph, positive results were obtained in all eight cases tried, and in four of these individuals clearly enunciated isolated or sentence forming groups of words were heard; in three others it was thought that words were spoken, but were either too quick or in a foreign language, so that they were not understood. Two recognized the voice as male or female, and in the former instance the person was named. In the cases where articulate speech was not heard, in some, doubt was expressed as to there being a voice, and most observers characterized the sensation perceived as music, singing, a lot of people all talking at once, a chorus of people singing in a foreign language, etc.

It is, of course, difficult to determine with any exactness what effect the degree of dementia may have had in the production of these results. A casual study of the clinical records in these cases indicates that the more evident the dementia, the more likely are the perceptual disorders to be produced experimentally. In the less demented, for instance, one finds more regularly, if any at all, the perceptual disturbances for elementary sounds; whereas, in the more demented, phonemes and connected discourse are to be heard. This may all be looked upon as but evidence of the grade of damage to the powers of criticism and judgment, preeminent demential tokens in paresis. As a corollary to this assumption we might suppose that this weakening of critical ability had led to a greater efficacy of suggestibility in the paretic mental processes, and, therefore, the direct form of questioning experimentation, as used in this work, would be calculated to emphasize any such possible hypersuggestibility. However, are we not as fully justified in concluding that these positive results are but evidence on the surface of an underlying loss of capacity to withstand resistance, the paretic in his mental life following along the path of least effort, accepting material presented to the senses without that normal degree of criticism which tends to render perceptual disturbances minimal in amount? We know from clinical experience that in a large portion of our paretics we may obtain almost any desired answer in accordance with the framing of the question, that a patient will from moment to moment make absolutely contradictory statements with the greatest facility and nonchalance. Such reactions must

have led many to the impression that the discordant responses in such instances were due to carelessness, lack of effort, etc., because often enough by proper questioning with sufficient stimulus concordant replies may be obtained from the same patient. At least, that the degree of dementia plays a prominent rôle in the reactions appears in part substantiated by the reactions obtained from other patients not suffering from paresis and from normal controls by the same plan of experimentation. Besides the normal, experiments were made with cases of præcox, cerebral syphilis, manic depressive insanity (both depressed and excited phases), involutional melancholia, senile psychosis, alcoholic hallucinosis, defective with epilepsy, and tabes without psychosis—twenty-nine observations in all. It is significant that of these, only four, two of these præcox and two cerebral syphilis (one of the latter long looked upon as a paretic), show a positive hallucinatory reaction. In the cases of senile psychosis the dementia had progressed to such a marked grade that the cases were hardly satisfactory for the experimental investigation.

These experiments tend to show that in paresis there is an easily demonstrable tendency toward auditory perceptual disturbance and that this tendency is more pronounced under similar experimental conditions in paretics than in normal individuals or in those suffering from other mental disorders than paresis.

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UNIVERSITY CLUB.

MANAGEMENT AND TREATMENT OF FUNCTIONAL NERVOUS CONDITIONS.*

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The great difficulty encountered by every physician in the classification of functional nervous diseases is accepted by all, but it is the intention of this paper to include all those nervous disorders that lie, as Doctor Barker states, between the broad borderland of mental health and outspoken mental disease (insanity). In dealing with the hysterical, neurasthenic, and psychasthenic states, I am deeply mindful of the fact that many grave and organic diseases commence with such nervous and mental symptoms, and the physician who undertakes the management of what he believes a functional nervous state should be, and must be, a skilled diagnostician, and exhaust the refinements of diagnosis in the study of his case. Most of the patients admitted to Creighton Sanatorium have been received from hospitals and physicians in Baltimore who have made exhaustive and painstaking examinations with negative results as to organic disease, and it is of these patients who are mentally sick (not insane) that I wish to speak.

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The characteristic of all these cases (the hysterical, the neurasthenic, the psychasthenic) is the patient's mentality. The functional disorders which he experiences are about the same as in normal persons—it is his exaggerated feeling toward them which distinguishes him. A mole hill assumes the proportions of a mountain in his eyes. He is sensitive and emotional, but the chief thing about him is his sense of fatigue. If he does not sleep he regards his condition as physical, but will easily recognize the psychic origin of his fears and worries and distressing memories when pointed out to him. We all get tired and we all have worries and annoyances, but we try to make the best of them, but a nervous patient looks at these annoyances through a magnifying glass and each appears a catastrophe. A person is not neurasthenic in the same way as he is phthisical, uremic, or cardiopathic, but he is neurasthenic just as he is lazy, undecided, timid, irritable and susceptible. A patient will often present a wonderful contrast in his healthy physical condition—the perfect animal—while the mind is altogether sick. When the question comes up between temper and disease, how is it to be decided? A very fine line runs between the two, and one will qualify the other. It is a difficult thing for these patients to recover in the midst of friends and home surroundings. This seems strange, yet we can easily see that the diseased mind must be removed from familiar reminders of worry and pain. Loving, sympathizing friends keep many an invalid in their nervous condition. To be judiciously let alone is sometimes very beneficial, but the physician will succeed where the family fails, because he holds a certain moral authority and uses gentle persuasion. The relatives have no longer this suggestive influence. The patient knows their qualities, also their faults, and he takes their advice in the wrong way.

Of all the recent, marvelous discoveries in science and medicine, there is nothing more wonderful than the realization of the power the mind wields over the physical well being of humanity. Human nature is prone to evils of many kinds, but the fears or phobias which are deep in the inmost recesses of all hearts and minds are what must be rooted out and brought to the light of day and the sunshine of faith and trust. Above all else, treatment must be psychic. Yes, there are other methods, and a vast deal of science, but above all else the soul must be reached. In the words of Professor William James, "in summing it up, it is simply the want of will to do." The object of the treatment should be to make the patient master of *himself*. The means to this end is the education of the will, or, more exactly, of the reason. Whether he wishes to or not, the physician must be a psychologist, a lover of human nature; he must feel a deep sympathy for his fellow man. His faith must be true and strong—he must have confidence in himself to get the confidence of his patient, with an endless amount of patience and perseverance. He will find that this knowledge of the human heart is more useful than his ability in questions of normal or pathological physiology. Humanity is realizing more and more that the hidden things are the real things. Electricity, the most marvelous power,

is only seen in its results. Our hidden thoughts are the powers that guide our wills and deeds. As the plant springs from the seed, so every act springs from the hidden seed of thought. "As a man thinketh in his heart, so is he, and out of the abundance of the heart the mouth speaketh."

Every heart has its deep longing for love. In youth it may be satisfied by human affection, but should this fail or prove to be an empty dream, the heart must have other consolation or else become a burden to itself and to friends and relatives. These unsatisfied longings indicate a soul reaching for its God—the only true source of happiness. If no wise friend points these persons in the right direction, if these feelings are crushed or bruised, the necessary consequence will follow—diseased mind and body. The nervous patient is on the path to recovery as soon as he believes he is going to be cured—he *is* cured on the day he believes himself cured. How to teach these people the faith and trust which are necessary to a calm adjustment of their lives is the great question. The physician knows all the secrets of the heart far better than any clergyman of the church. If he is not prepared to meet these heart questions, what is to become of the soul of his patient? The Universe itself is a sacrament ("an outward and visible sign of the inward and spiritual grace"). So our eyes should be open to learn the signs by which the Spirit of God manifests itself in Nature, first in the simplest beauty of the flower and bird. When such patients can begin to notice these wonders of Nature you have an open road to the heart, to show the love of God manifested in the most minute detail (the marvelous workmanship of the flower, the care of the tiniest bird), and how much more He cherishes and cares for his human creature, endowed with mental powers akin to the Divine Himself.

A synopsis of a few cases treated at Creighton Sanatorium will give an idea of what can be accomplished by reeducation:

Case I. Miss O., aged forty-two years, admitted to Creighton, August, 1907. Previous history: Fifteen years an invalid, for past two years bedridden. On admission, was in most depressed state, absolutely hopeless herself, would not smile or even open her eyes. A careful and thorough examination revealed no organic disease. Sympathetic relatives had trained her mind to complete invalidism, and it seemed a desperate case and one requiring desperate measures. Mild and gentle persuasion was used with no apparent effect. Dainty trays with tempting meals, set off with a beautiful rose, all had no effect, but in time the rose was missing; it was asked for, and this seemed to be a step in advance. After much perseverance and patience she was made to get up and make her bed; the next day a walk in the room and halls; a day or two later, down stairs and out on the lawn to a hammock. When the time came that she must return to her room she declared she *could not.* The cows were calmly grazing in the pasture at a little distance. City people being somewhat afraid of cows, a suggestion as to letting the cows out had the desired effect, and she walked to the house alone. The point gained there was followed up by helpful and positive suggestions, and she has been walking ever since. Improvement was gradual and progressive. She gained the mastery of herself, and was discharged in the following November in good condition. At the present time she is doing the housekeeping at home, has regular appointments to read to two invalids, and wherever she goes brightness and sunshine are all around her.

Case II. Mrs. R., referred by Dr. H. B. Thomas; admitted August, 1910. Age sixty-three; weight 117 pounds; nervous, fretful, unable to sleep, worried all the time by business cares and small details, at times emotional. Brother ill in hospital in Baltimore. A careful examination excluded organic disease. Her friends thought it impossible to change the mental attitude of a person of that age, but not so. After months of a normal quiet life in the country, with patience, perseverance, and suggestions, reeducation of the will has been so well accomplished that to-day she is a bright, energetic, active woman, walking five miles a day; she sleeps eight to nine hours at night and pays almost daily visits to her brother, who is a hopeless invalid. A few lines of a letter received from her only a few days ago, will convince anyone what a bright, happy, useful woman she is now. "I wish to tell you of some of the things I have been absorbed by. My friend, Mrs. P., is at the Woman's Hospital for a small operation. She has not had a special nurse, and I spent the whole day with her yesterday and went back at night for an hour; and still the world looks bright to me."

Case III. Mrs. J., referred by Dr. L. F. Barker, who stated that there was no organic disease. Admitted March, 1911; age forty years; weight 130 pounds, but pale, anemic, complaining of general pains; extreme fatigue on least exertion. So extreme was her fatigue, in her own mind, that conversation could not be carried on for more than five minutes; then must come a long period of rest. The history of this case was extremely interesting from the fact that the patient was a woman of wonderful talent, an artist, writer, and musician, and the period of invalidism dated back eight years. Doctor Barker realized the unusual mentality in this patient, and advised me to go slowly. Progress was tedious, but after a while her confidence was gained, and the basis of all her trouble was found to be disappointments and unhappiness in her home. After months of patient teaching and training she told me that she realized the will to do had to originate in herself, instead of solely depending upon the doctor. Then she accepted life as it existed, and self mastery was established. She gained in weight, and weeks before her discharge was walking five miles a day. Pain and fatigue had disappeared. In a portion of a letter received from her at her home in Ohio one year after her discharge she said: "I have actually written at least the first draft of a play, and I feel that I have started on a habit of life for which I was born, and which, in spite of some bad days, I shall be able to maintain."

Case IV. Mrs. B., also referred by Doctor Barker, was admitted October, 1910. Age sixty-three years, widow, professor of Latin in high school in one of the large cities of Kentucky. Previous history: Had a nervous affection of mouth for three years which interfered with talking. In repose her expression of face was peaceful and pleasing; when talking the chin would drop and various grimaces and distortions of the muscles of lower half of face would occur. She was sent to the Mayo brothers, of Rochester, Minn., for operation. After a thorough examination by the Mayos they declined to operate and referred her to Doctor Barker, who, in turn, referred her to me; and a note from Doctor Barker stated that there was no organic trouble, but in his opinion the trouble was psychic. Her treatment consisted of absolute rest (not allowed to speak for three weeks), cold packs, mild galvanic current to facial nerves; then she was allowed to talk slowly and only a few words. As time went on conversation was gradually enlarged until she gained control. A letter from her a few days ago stated that she was practically well.

Apropos of the line of treatment carried out with these patients, I wish to quote part of an address by Sir William Osler to the medical students of the University of Toronto on The Pursuit of Happiness, which expresses very forcibly the thought which dominates my work:

You may learn to consume your own smoke. The atmosphere of life is darkened by the murmurings and whimperings of men and women over the nonessentials, the trifles that are inevitably incident to the hurly burly of the day's routine. Things cannot always go your way. Learn to accept in silence the minor aggravations, cultivate the gift of taciturnity and consume your own smoke with an extra draught of hard work, so that those about

you may not be annoyed with the dust and soot of your complaints. More than others the practitioner of medicine may illustrate the second great lesson, that we are here not to get all we can out of life for ourselves, but to try to make the lives of others happier. This is the lesson of that oft repeated admonition of Christ, "He that findeth his life shall lose it, and he that loseth his life for my sake shall find it," on which hard saying if the children of this generation would only lay hold, there would be less misery and discontent in the world. It is not possible for anyone to have better opportunities to live this lesson than you will enjoy. The practice of medicine is an art, not a trade, a calling, not a business; a calling in which your heart will be exercised equally with your head. Often the best part of your work will have nothing to do with potions and powders, but with the exercise of an influence of the strong upon the weak, of the righteous upon the wicked, of the wise upon the foolish. To you, as the trusted family physician, the father will come with his anxieties, the mother with her hidden grief, the daughter with her trials, and the son with his follies. Fully one third of the work you do will be entered in other books than yours. Courage and cheerfulness will not only carry you over the rough places of life, but will enable you to bring comfort and help to the weak hearted, and will console you in the sad hours, when, like Uncle Toby, you have "to whistle that you may not weep."

The writer fully realizes that there have been no new ideas advanced along the line of treatment of these unfortunates, but it is intended to show what has been done and what can be done in legitimate medicine. The doctor is, and must be, the medium, or living substance of faith to human need. May this be a plea to the medical profession to rescue from the quack and charlatan, the Christian Scientist and other faddist, what rightly and properly belongs to the domain of the true and earnest physician. *For it is a work well worth while.*

WHAT IS SLEEP?*

By Aaron Barlow, M. D.
Philadelphia.

It is said that we cannot fully appreciate the sweetness of life until we have tasted some of its bitterness. Whether this is true or not about life in general, it is undoubtedly true about that particular phase of life which we call sleep. No one can appreciate the sweetness of sleep; no one can fully realize what a blessing sleep is to mankind, until he has been deprived of this most wonderful, most mysterious restorative of life—sleep. The tremendous importance of this subject first dawned upon me when, on one occasion, I was a victim of insomnia. I spent a most miserable night. For four long hours, which seemed like four years, I was courting Morpheus without success. I tried all the well known devices in order to lull myself to sleep. Thus, like Robert Southey, in *The Doctor*, "I listened to the river and to the ticking of my watch; I thought of all sleepy sounds and of all soporific things—the flow of water, the humming of bees, the motion of a boat, the waving of a field of corn, the opera, Mr. Humdrum's conversations, Mr. Proser's poems, Mr. Laxative's speeches, Mr. Lengthy's sermons;" but all in vain. Sleep, sweet sleep would not come. It was still night, only the noise of a passing trolley interrupted the stillness from time to time. As I lay on my bed in torture and misery, I recalled to my mind the thrilling soliloquy of Henry IV:

"O Sleep, O gentle Sleep,
Nature's soft nurse, how have I frighted thee,
That thou no more wilt weigh my eyelids down,
Nor steep my senses in forgetfulness."

One hour out of every three, eight hours out of every twenty-four, three months out of every year, and twenty-three years out of every three score and ten, or one third of our lives we spend in sleep. Thus, taken in the aggregate, every one of us is a Rip Van Winkle. There are men of science who spend time and effort studying how to prolong life. But "why try to prolong life if so much of it is to be spent asleep?" is a question long since asked by the great German philosopher Immanuel Kant.

What, then, is sleep? This is a question more easily propounded than answered. When we turn to the scientific literature on the subject we find comparatively little definite information, and the most striking thing is that we do not seem to care how much or how little we do know about the subject. I often wonder why it is that such a mysterious and highly interesting subject as sleep should occupy our attention so little. It is probably because, as Dr. William H. Thomson in his work *Brain and Personality* well remarks: "The marvel of sleep is lost upon us owing to the unfortunate peculiarity that our ability to wonder is soon abolished by mere repetition. Because the recurrence of sleep is as certain and regular as sunset itself, it does not occur to us to wonder at it, or to ask what it all means." Sleep may be defined as the intermediate state between wakefulness and death—wakefulness being regarded as the active state of all animal and intellectual functions, and death their total suspension. Complete sleep is a temporary intellectual death. It is a condition of unconsciousness where all the senses are at rest. Yet, there still remains the question, What causes the actual lapse into unconsciousness?

Let us first see what are the phenomena of sleep, what are the differences between the waking and the sleeping states. When we fall asleep the eyelids are lowered over the eyeballs, the pupils contract, and all the voluntary muscles are relaxed, so that the whole body, and especially the face, presents a picture of complete repose. Respiration becomes slower. The pulse slackens. The blood pressure falls, the vessels of the brain contract, and the quantity of blood to the brain is diminished. The observations of many investigators have shown that the brain contracts and grows pale while asleep, and, on the contrary, takes on a rosy hue and expands at the moment of awaking. When we sleep the lower half of the body weighs more than the upper half. The brain is lighter and the legs are heavier. Experiments have shown that if a man goes to sleep on a bed suspended exactly at the middle point of his weight his head begins to tip slowly up and his feet to go down. This is due to the fact that when we sleep the blood in the brain goes off to the other parts of the body. The moment the brain wakes to life again it draws the blood back. All these facts clearly show that there is an intimate association between sleep and cere-

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bral anemia. The action of the sweat glands and the functions of the skin are increased during sleep. This, in part, explains why the atmosphere of our bedrooms becomes impure so rapidly. All the internal organs remain quite active during sleep. The whole peripheral nervous system also preserves during sleep some power of action. This is why, when we wish to sleep we instinctively seek a quiet place sheltered from all external disturbing influences, and we lower our eyelids over our eyes to prevent light falling on the sensitive optic nerve.

We thus see that during sleep nothing is asleep within us except the brain. But does the whole of the brain sleep? A moment's reflection will convince us that it does not. Let us consider, for instance, the phenomena of dreams. In our dreams we may experience the most varied emotions and passions. Our dreams are as variable as the clouds that drift upon the currents of the air. We dream of great wealth, fame, or success. We are great actors in great spectacular and romantic dramas. We dream of great ideas, and we accomplish most wonderful things in our dreams. If our dreams were but real, the achievements of the Wright brothers, Shakespeare, or Napoleon, would dwindle into insignificance. Or, again, let us consider such phenomena as walking or talking during sleep. A man may walk, talk, sing, or solve mathematical problems, and yet at the same time be safely in the land of nod. Dr. William H. Thomson narrates several interesting cases. One is the case of a college student named Childs, who one night working at a difficult problem in mathematics until a late hour and failing to solve it, put out the light and retired to bed in much vexation. About three o'clock his roommate was awakened by a light, when he saw Childs in his night clothes, busy with the problem. He called to Childs to desist from such untimely work, but not receiving any answer, turned over to sleep. The next morning while both were dressing, Childs complained that his night's rest had not refreshed him. "I am not surprised," replied his friend, "when you got up about three o'clock and went at that problem again!" Childs answered that he had done nothing of the kind, when, glancing at the table, he was astonished to find the problem all correctly worked out. Cleghorn mentions the case of a man in an exhausted condition who awoke from sleep, took his share of supper with his comrades, sang some songs with them, and went to bed again, without being able to recall any of these events in the morning. How are these things to be explained? Facts of this order clearly show that some parts of the brain remain quite active during sleep. We thus see that even the brain is not wholly asleep, but only some of its elements. What is it, then, that sleeps in the brain? This leads us to the theories of sleep, which we will now briefly review. The principal of these are the vasomotor, the chemical, the histological, the psychological, and the biological.

The vasomotor theory. According to this theory sleep is due to changes in the cerebral circulation. I have already referred to the direct proofs of cerebral anemia during sleep furnished by many investigators. Fleming, by deep compression of the carotid arteries, was able to produce prompt sleep. A well recognized cause of obstinate insomnia is high blood pressure. According to Sajous, sleep is brought about by the sympathetic centre in the posterior pituitary body sending constrictor impulses to the anterior pituitary, which governs the function of the thyroadrenal system; the effect is a diminution of the internal secretion of these glands, and thus a lowered metabolic activity, which permits general vasodilatation. The blood accumulates in the splanchnic area and the large trunks, cerebal anemia being one result.

The chemical theory explains sleep as the result of the accumulation in the organism of fatigue products. These poisonous substances, elaborated during the day as the result of muscular and nerve activity, are narcotic in action. They have a direct action upon the central nervous system, particularly the brain, and when they reach a certain amount drowsiness, and then sleep, results. During the night these toxic substances are eliminated, and when elimination is nearly complete a slight stimulus suffices to produce awakening.

The histological theory explains sleep by the recession of the dendrites. According to this theory, these nerve cell prolongations, the dendrites, which touch each other, and by means of which nerve currents are transmitted from one cell to another, are supposed to possess certain movements, which, like the pseudopods of an ameba, elongate and retract under various influences. When these dendrites are retracted, so that they no longer come into contact with one another, the nerve currents which are necessary for consciousness are broken, and sleep results. But this theory, a very fascinating one, to be sure, is largely hypothetical, and explains not so much the causes of sleep as its ultimate nervous mechanism.

As for the vasomotor theory, there seems to be no doubt that cerebral anemia is one of the factors in the causation of sleep. We cannot, however, say that this is the only and direct cause of sleep. With reference to the chemical theory, we must remember that mere boredom, or monotony, in the absence of all fatigue is sufficient to cause sleep. Then, again, this theory does not explain the power we possess of postponing sleep or of awaking at a fixed hour. Experiments conducted on a number of men and women showed that sixty per cent. of them were able to wake up in the morning at any time they had decided upon the night before. I well remember how, when a boy, my private teacher, who instructed me in matters of religion, told me of a sure method of awaking in the morning at any hour I might desire. This method consisted in reciting just before going to sleep, the following verse from the Psalms of David: "Awake, thou lute and harp; I myself will awake right early." I was to recite this seven times, at the same time—and this was strongly emphasized—having my attention concentrated upon the hour at which I desired to awake. I remember I practised this method for a number of years, and it almost never failed me. I am sure many of you have had the same experience. You have been able to awake at a certain time, if on going to sleep you resolved, you ordered yourselves, as it were, to awake at such and such an hour. The resolve seems to wind up something in the subconscious brain, and when the hour has arrived the clock gives in some myste-

rious way the alarm and the eyelids open. It is also interesting to observe how a mother awakes at the slightest movement of the infant she tenderly loves, although the loudest tempest may not have the effect of arousing her.

The psychological theories. According to Manaceine, sleep, from a psychic standpoint, is the resting time of consciousness. If this be so, then persons in whom consciousness is little developed should sleep more than persons whose "acute realization of the ego" is more pronounced. And when we investigate we find that this holds true. Children, in whom consciousness is feebly developed and becomes quickly exhausted, need more sleep than adults. Among adults we may also observe that the less energetic the state of a person's consciousness the more sleep does it require. The uneducated, savages, cretins, idiots, and so on, all sleep more than the average number of hours. In old age we again find that as senility approaches there is a more or less predominance of sleep. As we grow old, consciousness grows weaker and is quickly exhausted; hence the need of sleep is the same as with children. On the other hand, old men whose intellectual powers have been well preserved sleep little, and may even suffer from insomnia. This is because the conditions of life in old age are such that the causes of the exhaustion of consciousness are more or less removed, and consequently less rest is required. It is also a well known fact that persons with very marked personality and highly developed consciousness have relatively little need of sleep. Thus we know that Humboldt, Mirabeau, Schiller, Frederick the Great, and Napoleon slept very little. It is said that Thomas Edison, the great inventor, never sleeps more than four hours a day.

The biological theories. Claparède and Sidis, who have elaborated these theories, consider sleep from an evolutionary standpoint. "Sleep," says Claparède, "did not necessarily exist at all times; it is in fact a contingent phenomenon, and is not implied in the conception of life; the lower forms of animal life, microbes and infusoria do not manifest any sleep. If sleep has developed it is probably due to the fact that those animals whose activity was broken by periods of repose or of immobility have been favored in the struggle for existence, for they have been enabled, thanks to the accumulation of energy, during these periods of immobility, to manifest in consequence a more intense activity."

According to this theory sleep is a reaction of defense to protect the organism against fatigue, rather than the result of fatigue. It is an instinct, as much an instinct as sex or hunger. We sleep, not because our nervous system is poisoned or exhausted, but because we cannot help sleeping.

In conclusion, a word about the necessity of sleep. Is sleep necessary? It may sound strange that one should even doubt the necessity of sleep, yet such doubts have actually been raised. Girondeau declared sleep to be a useless, foolish, even hurtful habit. Thomas Edison declares sleep is only a bad habit the race has acquired, and Kant regarded the bed as the nest of diseases; but experiments have shown that we cannot live without sleep. The want of sleep is even more keenly felt by all animals than the want of food. Without sleep and without hope, says Kant, man would be the most unhappy creature in the world. Perhaps some day someone will discover the secret of how to live without sleep. In these days of wireless telegraphy, aeroplanes, and dictographs everything is possible. Until that day arrives, however, we must, if we wish to live and enjoy life, have the restorative and refreshing effect of sleep, for, in the language of Wordsworth,

"Without Thee what is all the morning's wealth,
Dear Mother of fresh thoughts and joyous health?"

1431 North Franklin Street.

ECZEMA DECEDENS.

By William P. Cunningham, M. D.,
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We have so many definitions and qualifications of eczema, indicative of its etiology, appearance, location, duration, and other accidental circumstances, that the addition of one title will not seriously overburden the terminology. In point of fact the adjective herein suggested has for its object such a simplification of the whole subject that much redundant verbiage may be eliminated. To paraphrase the utterance of a celebrated Roman orator, "Eczema moriendo multa expurgabit inutilia verba."

Eczema is an unfortunate term to employ in describing the complex entity included thereunder. It is archaic, inexact, and misleading. In the original Greek it means simply a cutaneous eruption. It is evident that this blanket appellation covered a multitude of errors in the beginning, just as after a long series of eliminations it is still the refuge of much dermatological drivel. As our knowledge grows, the limitations of eczema contract. Walker, of Edinburgh, says: "Eczema is a term commonly applied to any wet or scaling inflammation of the skin of the cause or nature of which the observer is ignorant." It is applied to so many dissimilar conditions that it cannot properly attach to all. Certain diseases called eczema are admitted to be incorrectly named; yet the misnomer is perpetuated through deference to precedent and indifference to scientific precision. As an illustration, seborrheic eczema is conceded to be no eczema at all. It is a dermatitis due to the microbacillus of Sabouraud. It has been admittedly stricken from the category of the eczemas, yet to-day it is convertibly entitled seborrheic eczema and seborrheic dermatitis. Eczema marginatum is ringworm of the crotch, but we stupidly continue the palpable fraud. Intertriginous eczema is simply a dermatitis produced by the heat, moisture, and friction of opposing cutaneous surfaces. Erythematous eczema is nothing but a dry dermatitis. Styling it eczema only interjects an element of mystery and confusion. There is an indefinite something supposed to be added to its etiology by this alteration in its title. If we say dermatitis, that is simple. If we say eczema that strikes deeper. It is more complex. It begins to delve into constitutional causes and minimize the effect of the perfectly effi-

cient east wind. If a washerwoman, bartender, baker, plasterer, dyer, furrier, tailor, or surgeon, has a dermatitis, resulting from irritations incident to occupation, we straightway dub it a trade eczema. We declare that there is a lessened resistance, in these individuals, to causes innocuous in others. That lessened resistance is the vague and weighty something upon which we hang our sage distinction between a plebeian dermatitis and the more resounding trade eczema. There is business here with intricate problems of metabolism, not to be lightly dealt with. Why has one dyer a trade eczema and another one not? I am sure I do not know, any more than I know why one person is attacked by influenza and another one not. Skins have their idiosyncrasies as well as noses. But the inquiry is of no earthly consequence, because you cannot alter the susceptibility in either case, and the only remedy is to remove the exciting cause. We have no vaccination against eczema, nor against influenza, as far as I know.

Of course, no one at all acquainted with the matter in hand will deny the influence of internal derangements in producing diseases of the skin. The so called infantile eczema, undeniably due to faulty feeding, is a case in point. Here we have our cutaneous irritant acting from within, aided and abetted in most cases by injudicious washing. The advocates of lessened resistance state this as a frank concession of the whole point at issue. On the contrary, it is an illustration, not of lessened resistance but of an active cause operating from within. You may treat assumed or demonstrated metabolic errors right to the end of the chapter, but if you do not take the dyer away from his dyes, the plasterer from his lime, and the bartender from his beer slops and rinsing water, you will not cure his eczema. Conversely, if you do remove these external irritations, you will most likely remove the eczema, whether or not you effect any change in the patient's metabolism. You can by no method of treatment within our present knowledge so fortify the patient's resistance as to make him proof against the assaults of the aforesaid irritants. In the moral law one must flee the occasions of sin, or he will fall, no matter how strongly he may be fortified by good resolution. In the physical law the victim of eczema must flee the occasions of eczema or he will itch, no matter how we may strive to bolster up his "lessened resistance." It is plain that eczema is nothing but a dermatitis aroused, in every instance, by an exciting cause, whether this be demonstrably external, supposedly internal, or confessedly unknown. It may be objected that nothing will be gained by replacing the word eczema with the word dermatitis, as we shall have to qualify the latter with just as many adjectives in order to distinguish its varieties. We shall be accused perhaps of making a fussy distinction between tweedledum and tweedledee. In point of fact, we are seeking to abolish that very distinction which is already in vicious operation. Making for simplicity, we would make for clarity. Dermatitis carries with it its own definition; it immediately presents the idea of inflammation and an exciting cause. Eczema, on the contrary, because of the inexactness, vagueness, and looseness of the term, suggests little or nothing. It is better to employ the term with the rational etymology than the one with the single dubious support of hoary usage. Infantile dermatitis will answer just as well as infantile eczema, and will not confound the inexpert with supposititious complexities. Parasitic dermatitis will answer as well as parasitic eczema to decribe the peculiar circular patches that somewhat resemble ringworm and which some day we shall catalogue as a distinct dermatosis. Dermatitis madidans will answer as well as eczema madidans to describe the weeping condition found on the legs of old people with enfeebled circulation. There is simply engorgement caused by gravity opposing a yielding heart. This progresses to a dermatitis with pronounced vesiculation and oozing. The cause here is purely dynamic, yet the lesion is ticketed with the same label as the one supposed to be caused by a parasite and the one actually caused by improper feeding. Impetiginous eczema is a dermatitis infected with pus germs. It is an impetigo implanted on a so called eczema; it is not, therefore, a particular phase of that protean enigma, but a combination of two common diseases of the skin. Intertrigo will serve our purpose quite as effectually as intertriginous eczema. Eczema tuberculatum is a shining example of the loose employment of this infelicitous term, for it is not an eczema at all, but a distinct clinical entity, with a fatal prognosis, known as mycosis fungoides.

Neurotic eczema is the more or less widespread diffusion of little vesicles, attributable to some vagary of the nervous system not as yet determined. Neurotic dermatitis would convey as clear a picture of this eruption as does neurotic eczema, and would have the additional advantage of suggesting the pathology, an inflammation of the skin. It is a dermatitis due to a trophoneurosis, like dermatitis herpetiformis. The limitation of the term neurotic to this particular form of eczema is arbitrary and irrational, because if one fact obtrudes itself with peculiar insistence it is the active participation of the trophic nerves in the production of all diseases o the skin. Even in the parasitic diseases it is the nervous system which determines the amount of inflammatory reaction. In this regard the supporters of the lessened resistance theory of eczema are assuredly in the right. But this gets us back to the question of individual susceptibility; one nervous system resisting irritations to which another will succumb. To this question we have no answer. We only know how to remove the irritation; we do not know how to influence the individual reaction to it. Correcting dietetic errors and meretricious habits can hardly be called influencing predisposition, because these practices are in reality active circulatory and nervous irritants. Predisposition antedates habit; it lies deep in the cell of the individual.

The argument for the erasure of the word eczema might be carried through with the entire list of the eczemata with equal conviction. It is too much to expect, however, that any argument can bring about the speedy relegation of eczema to the dust heap of discarded anachronisms, because it is so firmly fixed in our literature; but if we will constantly bear in mind the identity of this disease with plain ordinary dermatitis we will be

on the alert to rescue from its suzerainty all such dermatoses as present distinct individuality and will thereby hasten the coming of the end. In the meanwhile awaiting that desirable result, what can we do to simplify the engorged phraseology and confused etiology of eczema decedens?

At the risk of being tiresome I shall reiterate the prime requirements: Do not forget that you are dealing with a dermatitis. Next, clip off all resonant synonyms for the simple description of the cutaneous lesion. A chronic cracked dermatitis of the palms, perfectly described by that homely phrase, is variously entitled "eczema craquale," "eczema fissum," "eczema rimosum," and "eczema rhagadiforme." This excess of epithets makes only for confusion. Next divide all the cases coming by convention under the terminology of eczema into acute and chronic, no matter what may be their other distinguishing characteristics. Give no heed in this primal investigation to conformation, location, or structure of the lesions. If you determine that it is an acute eczema, just mentally transpose it to an acute dermatitis. Now you will have much of your problem solved. You can proceed confidently to the removal of detectable exciting causes. You will not be confused by a bewildering choice of expedients if you are not confused by an alleged multiplicity of lesions. Brand them all acute eczema for a work out, and apply soothing remedies. Regulate habits as far as may be to eliminate irritation from within. You will find these measures successful in a surprisingly large number of cases. Having determined that you have to do with a chronic eczema, ignore for the moment the various subdivisions of this obstinate dermatitis, and proceed to stimulate with tar in some form. Remember, however, that chronic eczema may have acute exacerbations, for which emollients are indicated. Remember that internal irritants are to be sought for, just as in the acute condition. The key note to the successful management of eczema is this search for and removal of irritations, internal and external.

It may be safely asserted that eczema is proceeding slowly to honorable extinction. Its polymorphous being has yielded many offspring that have repudiated their lineage. A rational scrutiny of its remaining pretentions would leave it nothing but the sound of its former greatness.

315 West Fourteenth Street.

MYOMAS OF THE STOMACH,

*With Report of a Case Terminating Fatally by Hemorrhage.**

By Clifford B. Farr, M. D.,
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AND
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Benign neoplasms of the stomach, though rare, show a great variety of forms. Epithelial growths, adenomas, etc., are scantily represented, but connective tissue tumors of almost every type occur—lipomas, fibromas, myomas, and even chondromas and osteomas. Angiomas and cysts are found occasionally, but the latter in particular usually result from degenerative changes in myomas. Lymphomas occur in leucemia; lymphadenomas and endotheliomas are classed with malignant growths. Many of these benign tumors show a tendency to take the form of polyps—in some forms of chronic gastritis a general polypoid hypertrophy of the mucous membrane takes place, but the minute formations that result can hardly be classed as tumors from a practical standpoint. Myomas are the most important of the benign tumors with reference both to their frequency and to the symptoms to which they give rise. They are also important on account of their tendency to undergo sarcomatous degeneration. For these reasons, and on account of the comparative rarity of the condition, we have deemed the case observed by us worthy of report. We have added a list of reported cases including a number collected by ourselves, but have not analyzed them in detail, as this work was done with great thoroughness by Steiner in 1898 and by Hake as late as the present year. The frequency with which these growths have been found at operation, as noted in recent reports, indicates their increasing clinical importance. As far as I am aware, a diagnosis is yet to be made before operation or autopsy, though a sufficient symptomatology is at hand to make this quite possible under exceptionally favorable circumstances. We owe the privilege of reporting this case to the courtesy of Dr. Edward B. Hodge, the visiting surgeon.

Mrs. Emma M., a white woman, forty-nine years of age, was admitted to the surgical wards of the Presbyterian Hospital on April 30, and died May 17, 1912. The patient had been perfectly well, except for a slight failure of appetite in the mornings (for six months) and moderate dyspnea on exertion, until a few days before admission. After taking a dose of magnesium sulphate in the morning she had four dark tarry movements during the following night. Defecation was difficult on account of the sticky character of the stools. The morning after this occurrence she felt weak and faint, and the next day went to bed. In the evening before admission she vomited a quantity of bright red blood. She complained of increasing weakness and of pains in both iliac fossæ. The bowels were "torpid," though previously regular. She had never spat blood nor noticed blood in the stools prior to the present illness. She had had no cough. Her menses, regular until the previous year, were now scanty and irregular. Her appendix had been removed six years before. Otherwise her previous history presented nothing of interest. Her father had died of dropsy; one brother was subject to frequent nose bleed. There was no neoplastic history and no other records pointing to a hemorrhagic tendency. The patient was pallid, rather obese, with good bony and muscular development. Over the right thorax posteriorly there was a soft, movable, insensitive, subcutaneous tumor, evidently a lipoma. Otherwise the general examination and the examination of the special organs showed nothing noteworthy. The heart sounds were weak and the pulse somewhat rapid, but regular. The latter increased in frequency from 112 to 130 before death. The patient gradually lapsed into a stupor from which she could be aroused only with difficulty. Two injections of horse serum were given, but the bloody vomiting and the passage of blood by the stools continued. The laboratory findings follow: Urine, specific gravity, 1.023, acid, slight flocculent sediment, no albumin, no sugar, no indican; microscopically a few epithelial cells, occasional white blood corpuscles, no casts, no crystals. Stool (May 3, 1912): Liquid with black tarry lumps and much glairy mucus; intensely positive to the benzidine test for

*Read before the Section in General Medicine of the College of Physicians of Philadelphia, December 23, 1912.

blood; microscopically, a few epithelial cells and much mucus, no ova and no parasites. Blood counts:

Date.	Hemoglobin. Per cent.	Blood corpuscles: Reds.	Whites.	Differential.
April 30...	31	1,890,000	23,100	Polymorphonuclear cells, 78 per cent.; small lymphoid, 14 per cent.; large lymphoid and transitional, 7 per cent.; basophile, 0; eosinophile, 1 per cent.
May 6....	28	.....	12,900	
May 11...	25	1,350,000	.....	
May 15...	23	1,120,000	.....	

A clinical diagnosis of gastric ulcer was made.

The autopsy findings will be very briefly stated. The subcutaneous tissues, mesentery, and omentum were heavily laden with fat. The appendix was absent, but there were dense adhesions between the ascending colon, ileum, and abdominal wall, while a firm band dragged the lower part of the ileum into the pelvis, attaching it to the fundus of the uterus. The pelvic organs were normal. The abdominal organs were pale in color but normal in position Both pleural cavities contained a small amount of free fluid; a few fine adhesions were found at the base of the right lung. Both lungs were anthracotic and emphysematous. There was well marked edema and hypostatic congestion (confirmed microscopically). The heart was heavily laden with fat (infiltration); the ventricular walls were thickened; there were no valvular lesions. Microscopical examination showed beginning atrophy of the heart muscle. The spleen was very soft and anemic. The liver was pale and of a yellow color (fatty). Histologically, fatty infiltration and passive congestion were found. The gallbladder was normal; there were no stones. The pancreas also presented nothing worthy of note. The kidneys were soft and yellowish in color (fatty). On microscopical examination fatty infiltration and parenchymatous degeneration were found. Nothing was found in the intestines. At the fundus of the stomach a dumbbell shaped mass was discovered, projecting equally into the stomach and peritoneal cavity and presenting on the gastric surface two ulcerated areas. The tumor was on the greater curvature, five centimetres from the cardiac opening. The outer nodule was three by five and one half centimetres and was slightly irregular or lobulated. The intragastric portion was nearly symmetrical and measured four and one half by five centimetres. The latter presented a punched out, round ulcer, with almost perpendicular walls, twelve millimetres in diameter, and six millimetres deep. The other area was larger (twenty-seven millimetres in diameter) and more superficial, denuded of epithelium, and with a rough or eroded surface. No exposed blood-vessels were discovered. Sections were taken from the outer nodule and from the inner portion near the large denuded area. Histological examination revealed a tumor made up largely of smooth muscle fibres with a moderate admixture of connective tissue. In the neighborhood of the ulcerated area there was dense, round cell infiltration. The diagnosis of myoma was confirmed by the clinical pathologist, Doctor Pfeiffer, and afterward by Prof. Allen J. Smith. Although this tumor cannot strictly be called either external or internal according to Steiner's classification, it should be classified under the latter heading on account of its associated clinical symptoms, which were characteristic of this type. Unfortunately, no examination was made of the tumor on the back which is mentioned in the clinical history. There is little or no doubt, however, but that it was a simple lipoma.

We have collected twelve cases in addition to our own (see appended tables), several of which present interesting points. Anitschkoff reports three museum specimens in which myomas were found at the junction of the cardia and esophagus; there seems to have been no history of esophageal obstruction in these or any other cases that we have seen reported. Bullock's cases were both seen at operation. One, in a colored female of sixty-three, was situated on the anterior wall of the stomach. The clinical diagnosis was omental cyst. The other, in a white woman of fifty-six, similarly situated, was diagnosticated as ovarian tumor, prior to operation. Ferguson's case we know only by title, Myoma at Cardia of Exceptional Size. Löwit, operating on a large abdominal cyst, was surprised to find that it sprang from the greater curvature of the stomach. It was a myoma with cystic degeneration. The patient made a good recovery. Nichols's case was associated with a carcinoma, as was also the case reported by Schilling (abstract only). The coincidence was in all probability accidental in both cases. Peugniez and Jullien have seen two cases at operation, in women of sixty-three and fifty-seven respectively. In both cases there were small nodules in the vicinity of the pylorus which caused symptoms attributed in the one case to cholecystitis and in the other to carcinoma of the stomach. Sherren's report refers to a man of fifty-seven who had an external polypoid tumor of the stomach weighing six and a half pounds. He lays great stress on the liability of these tumors to undergo malignant change. These cases, with those previously collected by Steiner, Deaver and Ashhurst, and Hake make a total of eighty-four reported to the end of 1912. A number of the cases, particularly those attributed to Cohen, are very scantily described or merely mentioned. Others, as those of Brodowski, Hansemann, Nichols, and Schilling, either underwent malignant change, gave rise to metastases (leiomyoma malignum), or were associated with malignant growths. If these cases were excluded the list would be considerably curtailed. For the sake of comparison it may be stated that sarcoma is at least half again as common as myoma of the stomach. In 1909 as many as 126 cases of the former condition had been reported. These two types of tumors are the most important noncancerous growths attacking the stomach. Hake found that a trifle more than fifty per cent. of gastrointestinal myomas were in the stomach. They were more common in females, and all but a few were in persons over thirty. Steiner, following Virchow, classified myomas into internal and external; Hake finds that these varieties occur with equal frequency.

Internal myomas occur at the pylorus, at the cardia, and in the body of the stomach, one region being as commonly affected as the other. When situated at or near the pylorus they are liable to cause symptoms of an obstructive type; at the cardia they rarely or never do. This is hard to understand, because growths completely encircling the cardiac orifice have been described. Perhaps this cause may explain some of the obscure cases of benign stenosis in this situation. When situated in the body of the stomach, these tumors usually give rise to no symptoms except when complicated by ulceration and hemorrhage. The ulceration may be similar to the ordinary round ulcer or result from tension of the overstretched mucous membrane, or may be due to the rupture of a degenerative cyst. Internal myomas do not attain a great size. External myomas are frequently of considerable size, the largest we have seen reported weighing 6,000 grammes, or thirteen pounds. These tumors usually have a long pedicle and are characterized by great mobility. They may be sessile, as was the outer portion of the tumor in our case. They have been mistaken for kidneys, tumors or cysts of the mesentery and omentum, uterine or ovarian growths, etc. They

are generally situated on the greater curvature, often near the cardia, less commonly on the anterior wall or lesser curvature, more rarely elsewhere.

The etiology is uncertain. They have been attributed, without much evidence, to irritation. Conheim's theory of congenital *Anlage,* aroused to activity by some unknown factor, has received the most support. The fact that they are generally found in advanced life does not negative this hypothesis because of their latent, benign character. Myomas of the gastrointestinal canal have been associated occasionally with uterine myomas, as well as with tumors of a different type, such as carcinoma, and therefore efforts have been made, though with scant success, to trace some etiological connection. Myomas arise from the muscular layer of the stomach as a rule, but in one case at least a myoma seemed to develop from the muscular coat of a small artery.

The symptomatology is not extensive. In the internal variety vague epigastric pain and, as in our case, loss of appetite may be noticed. The only test meal that we have seen referred to gave normal findings. If the diagnosis of carcinoma was in question this might be a suggestive point, though carcinomas with normal or increased acidity are probably more common than myomas. The duration of the case would be the most important point for differentiation. Aside from ulcerative cases, severe symptoms only occur when the pylorus is affected. Usually obstruction of varying degree with retention and dilatation are the consequences of the lesion. If a tumor is palpable, cancer is the natural diagnosis; if not, cholecystitis or cholelithiasis, gastric or duodenal ulcer, will be thought to be present. Cases have been reported in which vomiting soon after eating was the only symptom. The cases characterized by hematemesis and melena could only be distinguished from ulcer of the stomach or esophageal varix by the presence of a palpable tumor and the absence of signs characteristic of those conditions. Inflammatory tumors are not unknown in gastric ulcer or after gastric operations. In our case the tumor was clearly inaccessible to palpation. External myomas of the stomach may be distinguished from movable kidney, renal tumors, splenic tumor, and particularly retroperitoneal growths, by their greater mobility. This will not suffice, however, to separate them from intestinal and omental tumors or cysts which are equally movable. Vaginal examination may exclude growths of the uterus and annexa (Deaver and Ashhurst).

Severe and persistent hemorrhage, as in our case, provided the condition of the patient warrants it, and definite pyloric obstruction call for operation irrespective of the precise diagnosis. Although these tumors are benign, their tendency to malignant degeneration, and the difficulty of distinguishing them from sarcomas would in most cases suggest as wide a resection as possible. The results from operative interference, except in the early days of abdominal surgery, have been excellent. There is, of course, no medical treatment. In one case a polyp was strangulated, presumably in the pylorus, and vomited. We are indebted for most of the facts stated to Steiner, Deaver and Ashhurst, or Hake.

LIST OF REPORTED CASES OF MYOMA OF THE STOMACH.

Collected by Steiner (1898).

Original No.	Year.	Reporter.	Remarks.	Serial No.
2	1896	Steiner (Eppinger)	Died after operation	1
4	1762	Morgani	Found at autopsy	2
5	1845	Vogel	Found at autopsy	3
7	1858	Förster	Found at autopsy	4
9	1860	Sangalli	Found at autopsy	5
10	1863	Virchow	Found at autopsy	6
11	1863	Virchow	Found at autopsy	7
12	1858	Virchow	Found at autopsy	8
17	1876	Brodowski	Found at autopsy (Sarcomatous degeneration)	9
18	1879	Laboulbène	Found at autopsy	10
23	1883	Picenti	Found at autopsy; two nodules present	11
31	1890	Kunze	Operation, death after pneumonia	12
32	1890	Niemeyer	Death from hemorrhage, autopsy	13
36	1890	Pernice	Death from pyloric obstruction, autopsy	14
39	1894	Erlach	Operation, recovery	15
44	1895	Hansemann	Found at autopsy, metastasis	16
46	1897	V. Eselsberg.....	Operation, recovery	17
48	1898	Steiner	Museum specimens	18
49	1898	Steiner	Museum specimens	19
50	1898	Steiner	Museum specimens	20
		Supplementary Cases.		
3	1897	Kemke	Fatal hemorrhage, autopsy	21
5	1898	Herhold	Operation, recovery	22
?	?	?	Attributed to Steiner, not identified	23
		Collected by Hake (1912).		
1	1912	Hake	Internal myoma	24
2	1901	Noll	Internal myoma	25
3	1903	Cohn	Internal myoma	26
4	1912	Hake	Internal myoma	27
6	1903	Miodowski	Internal myoma	28
7	1906	Borrmann	Internal myoma	29
8	1899	Cohen	Internal myoma	30
9	1904	Samter	Internal myoma	31
10	1902	Poirier	Internal myoma	32
11	1899	Cohen	Internal myoma	33
12	1903	Caminiti	Internal myoma	34
14	1899	Cohen	Internal myoma	35
18	1903	Cohn	External myoma	36
19	1912	Hake	External myoma	37
20	1906	Fisher-Löwenstein.	External myoma	38
21	1906	Borrmann	External myoma	39
22	1906	Borrmann	External myoma	40
23	1903	Moser	External myoma	41
24	1903	Moser	External myoma	42
25	1903	Moser	External myoma	43
26	1907	Goebel	External myoma	44
44-56	1903	Cohen	No details given	45-57

Cases Collected by Deaver and Ashhurst, Not Included in Lists Given Above.

Year.	Reporter.	Remarks.	Serial No.
1893	Bouverct	.....	58
1898	Capello and Capello...	.....	59
1902	Cernezzi	.....	60
1879	Cutler	.....	61
1904	Gouilloud	.....	62
1875	Jean	.....	63
1883	Kidd	.....	64
....	Magnus-Ausleben	Adenomyomas	65-69
1901	Monro	.....	70
1906	Yates	.....	71

Two other cases (Ehrenberg's and Perls and Nelson's) listed by Deaver and Ashhurst are probably the same as those credited to Cohn.

Collected by Farr and Glenn.

Year.	Reporter.	Remarks.	Serial No.
1912	Anitschkoff	Museum specimens	72 to 74
1912	Bullock	Operation, recovery	75 and 76
1910	Ferguson	"Exceptional size"	77
1912	Löwit	Operation, recovery	78
1903	Nichols	Associated with a cancer, but independent of it	79
1910	Peugniez and Jullien..	Operation, recovery	80 and 81
1911	Sebilling	Accidental association with cancer of stomach	82
1911	Sherren	External myoma	83
1912	Farr and Glenn.....	Case reported in paper	84

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117 SOUTH TWENTY-SECOND STREET.
PRESBYTERIAN HOSPITAL.

TEETHING IN CHILDREN.

BY JULIUS SIDNEY HELLER, M. D.,
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About sixty per cent. of children cut their teeth with little or no discomfort, but the remaining forty per cent. are extremely ill and give rise to a great deal of anxiety on the part of the parents and the physician. Their troubles also frequently occasion errors in diagnosis, unless no diagnosis is made until the child is well again, when the diagnosis becomes evident. I have one case particularly in mind:

F. C., Brooklyn, baby girl, twenty-two months old, was brought to my office with a cough and moderate fever She had had several chills and occasional periods of perspiration. The child was also very irritable and would start in its sleep. I found that she had enlarged tonsils, while the throat was somewhat inflamed and the tongue red except for an irregular white coating on its posterior portion. Several days later another physician made a diagnosis of pneumonia complicated with malaria, and advised that the blood and urine be examined. I saw the child several times after this physician, and found that since I had last seen her she had had a very irregular temperature, varying from subnormal to 104° F. At times she had also had very rapid respirations and pulse rate, simulating the pulse respiration ratio of pneumonia. The child had lost her appetite, had fissured and bleeding lips, and was vomiting frequently, while her bowels were irregular in action. She also had a tense, tympanitic abdomen and showed an extensive erythema and eczema on her legs. The blood and urine both proved to be negative in every respect and all the symptoms and signs disappeared rather suddenly with the appearance of the four canine teeth.

704 EAST SIXTH STREET.

Therapeutic Notes.

Prophylaxis of Cerebrospinal Meningitis.—A. E. Thayer, in the *Southern Medical Journal* for February, 1913, recounting his experiences with this disease in the Dallas epidemic of 1912, emphasizes the necessity, in the case of carriers, proved by laboratory methods to harbor meningococci in their upper air passages, of requiring the thorough and frequent use of a spray in order to prevent spreading of the disease. The spray he has found of greatest value for this purpose is:

℞ Camphoræ, Thymolis, Metholis, ...āā gr. iii (0.3 gramme);
Tere bene simul et solve in
Petrolatum liquidum, ...ʒi (30 grammes).
Sig.: "Throat spray"; use freely four or five times a day.

(It is important that the three solids be first well rubbed together until a fluid results.)

As for the specific treatment of established meningitis, the author advises that not only antimeningococcus serum be given at intervals into the spinal canal, but also meningococcus vaccine administered hypodermically, every five to ten days, in doses of 500 million. The latter measure can be employed to great advantage from the outset, both to combat the systemic intoxication and to lessen proliferation of the cocci in the upper passages; this is accomplished very promptly, thus diminishing the danger of transmission and also of reinfection. Later in the disease the vaccine has proved valuable, in the author's hands, in shortening convalescence and decreasing the liability to complications and sequelæ.

Dry Treatment of Dermatoses.—C. J. White, in the *Journal of Cutaneous Diseases* for December, 1912, recommends that in exfoliative dermatitis and in pemphigus the patient be required to lie naked in bed, with the bedclothes supported on a frame, until moist areas have practically or entirely ceased to appear. The local treatment advocated consists exclusively in the free application of borated talc, which should be constantly kept in sufficient amount both above, around, and below the patient to absorb immediately any moisture that may appear. No contact between the extremities or the extremities and body should be allowed, the former being spread out and freely dusted with the powder.

Occasionally a moist place fails to dry up, but a crust develops with pus underneath. In such an event the crust should be removed, the drying powder applied, and if suppuration should happen to occur again, an antiseptic lotion, such as black wash, should be temporarily used; black wash is the lotis nigra recognized in the N. F. and is made up as follows:

℞ Hydrargyri chloridi mitis,..gr. xiii (0.88 gramme);
Aquæ, ...ʒi (4 grammes);
Liquoris calcis, q. s. ad.....℥iii (100 grammes).
M. Sig.: For external use. Shake well before using.

To relieve the patient of the discomfort in the nose, ears, mouth, and eyes, caused when the air is dry by the abundance of powder with which he is surrounded, cotton plugs, demulcent gargles, and lozenges and eye washes may be used.

A point of importance in the treatment is to have the patient constantly in the reclining position, even while eating, and attending to the emunctories. Water in abundance should be given by mouth, but the diet restricted to soft solids. Bathing is not to be allowed, as it would interfere with the drying process.

Treatment of Gastric Ulcer.—E. Quintard, in the *Post-Graduate* for February, 1913, states that no drugs should be given during the first week after a hemorrhage with the possible exception of strychnine hypodermically as a tonic, and codeine to quiet pain if it should persist. The codeine, or opium if it is required, may be combined with belladonna in a suppository:

℞ Codinæ,.....gr. ss-i (0.03-0.06 gramme);
Extracti belladonnæ foliorum,....(gr. ⅛-¼ (0.008-0.015 gramme);
Extracti hyoscyami.....gr. ii (0.12 gramme).
Fiat suppositorium unum.
Sig: One suppository to be used every night, morning and night, or every six hours.

If local tenderness should happen to persist in spite of appropriate dietetic treatment and Priessnitz dressings, small blisters may be applied to the affected area. If it be deemed advisable, bismuth subcarbonate in twenty grain to one drachm (1.3 to 4 grammes) doses may be given two or three times daily before meals.

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THE GENERAL PRACTITIONER AS THE FAMILY HYGIENIST.

In an interesting and suggestive address at the American Medical Association session, last week, Dr. Walter S. Cornell, of Philadelphia, enumerated the defects usually met with in children in the course of official medical inspections. Among these are mentioned as especially frequent: Eye strain, carious teeth, defective nutrition, flat chest, nasal obstructive disorders, defective hearing, inherited disorders of various kinds, and mental retardation. As a remedy he urges that medical textbooks give greater attention to these various subjects in their relations to school children, and that the work of the general practitioner should include their consideration with the same end in view, besides such subjects as home, school, and personal hygiene; the latter including ventilation, house cleanliness, physical culture, sex hygiene, and dietetics. Calling attention to the fact that the knowledge of the practising physician is now practically limited to the action of drugs, Doctor Cornell pleads for greater attention to health problems and for the adoption of the family physician as the adviser in all matters pertaining to the hygiene of the home.

Not only do we endorse Doctor Cornell's attitude—his position being especially weighty in view of his position as director of Medical Inspection of Public Schools of Philadelphia—but an early application of his recommendation seems to us of vast importance. Of all means of livelihood, medicine is the only one—and an exclusive title of nobility has the medical profession earned through it—which is steadily undermining its own interests for the sake of public welfare. That the average earning power of the physician is steadily decreasing all know. No nobler perpetuation of his good work and no purer motive for just compensation could be devised than that endorsed by Doctor Cornell. Of course, the public itself will require much training to be able to realize the beneficent results of such a plan, but the profession should at once begin to familiarize itself with new duties so truly in keeping with its highest aims.

BENZOL IN THE TREATMENT OF LEUCEMIA.

Practically the only treatment of leucemia that may be regarded as specific is the application of the x rays. There is no drug that is of any great value—at least there was none until last year, when Doctor Korányi, of Buda-Pest, reported on the curative effect of benzol on leucemia. Since then a number of clinicians, in this country and abroad, have employed this new remedy with results which are in the main very satisfactory and which indicate that benzol is equal if not superior to the Röntgen rays. In a recent number of *Roussky Vratch* (March 16, 1913) there appear four contributions on the treatment of leucemia with benzol. They are of interest not only because of the great importance of the subject, but on account of the remarkable unanimity as to the value of this drug in a disease generally regarded as hopeless from a therapeutic standpoint, in which the rôle of the physician, as stated by one of the authors, has been confined to a simple observation of the fatal progress. Dr. I. Ia. Ljachovsky, of the University of Moscow, reports a case of myelogenic leucemia in a woman, fifty-four years old, who was cured by forty-one days' treatment with benzol. At the end of the treatment the leucocytes were reduced from 400,000 to 4,000, with a corresponding increase of the erythrocytes and hemoglobin. The spleen also became almost normal. This, despite a pulmonary tuberculosis and a nephritis, both of which improved under the treatment. C. A. Moltchanoff, of the University of Kazan, reports three cases of myelo-

genetic leucemia, two in men, forty-two and thirty years respectively, and one in a woman, twenty-nine years of age; and two cases of lymphogenous leucemia, one that of a woman, fifty-one years old, the other in a man, fifty years of age. These five patients were treated with benzol with favorable results in each case. Dr. A. I. Demidoff, of the Military Medical Academy of St. Petersburg, reports a case of leucemia in a man of twenty-nine, successfully treated with benzol. N. I. Lutchevsky, of the Bachrushin Hospital in Moscow, also reports a case of leucemia in a woman, fifty years old, on whom apparently the benzol treatment made little impression after one month's administration; on the contrary, the appearance of phenol in the urine and severe gastrointestinal disturbances necessitated the discontinuance of the treatment; however, following the discontinuance of the benzol, the leucocytes continued to diminish, reaching normal in one month. Several interesting points appear in these observations. First, there is generally an initial rise in the leucocytosis following the administration of benzol. Second, the effect of benzol is more prompt in cases previously treated with the x rays. Third, the drug should be administered cautiously, as it may produce severe gastrointestinal disturbance and even cause death. The dose, as originally suggested by Királyfi, is 0.5 gramme each of chemically pure benzol and olive oil, put up in gelatin capsules, and from two to ten taken after meals, the doses being gradually raised until five grammes are taken daily. This is continued for six or more weeks, depending on the progress of the case, the latter being determined by a frequent study of the blood, as well as the clinical manifestations. It seems advisable to discontinue the treatment before a normal leucocyte count is reached, as the drug is destructive to the white blood cells, and the destructive process of the normal cells may go on unless the drug is stopped.

While further clinical and pharmacological studies should be made before definite conclusions are reached, there is ample evidence from the favorable reports published thus far that we have acquired a wonderfully effective therapeutic agent in the treatment of one of the gravest diseases of the blood.

AN INTERNATIONAL PHARMACOPEIA.

Physicians who have studied abroad, or who follow the foreign medical literature, even through the medium of abstracts, often feel the inconvenience of the differences between the national pharmacopeias not only as to nomenclature, but as to the strength or composition of preparations having the same name. Hence, any efforts to bring about a greater degree of uniformity in these matters will be welcomed by the profession. The first, and up to the present the only noteworthy, step in this direction was taken at the Brussels Conference on the Unification of Formulas of Potent Drugs in 1902; the recommendations of this conference have been for the most part accepted by the pharmacopeias of the leading nations, so that the galenical preparations of the most potent drugs are now of fairly uniform strength throughout the various countries.

Tschirch (*Schweizerische Wochenschrift für Chemie und Pharmazie*, April 19, 1913) thinks that the time has arrived for the nations to take another step in the same direction; he suggests that the various nations establish (perhaps in Bern) an International Pharmacopeia Bureau, one of the first functions of which shall be the preparation and publication of a work along the lines already followed by what he calls the "practical Americans" in the *Digest of Comments on the United States Pharmacopeia* published by the Division of Pharmacology of the United States Bureau of Public Health. Tschirch would also have the international bureau establish a laboratory where the various methods for testing and assaying drugs could be worked out for all the pharmacopeias. As the author remarks, each of a dozen or more countries are now doing this for themselves, and consolidation of this work in one central laboratory would not only result in a great economy of time and energy, but also in a much greater uniformity.

Although the *United States Pharmacopœia* is upon a different basis from that of most countries, being essentially a private undertaking, whereas the pharmacopeias of the other countries are owned by the governments, it should be possible for the United States to take part in this work; for not only has the federal government adopted the pharmacopeia as the official standard, but it is already expending a considerable amount of money in the preparation of the above mentioned digest, which already has an international character, and also in other work connected with the pharmacopeia.

THE EXPERT AND THE SPECIALIST.

There are two words that are heard a good deal in discussions and which, curiously enough, are used interchangeably without any attempt at definition. These two words are "specialist" and "expert."

There has been much talk of late years in medical bodies on the regulation of expert testimony, and whenever any matter of great importance is

to be decided it is customary to employ an expert. In medicine the term expert ordinarily comes up in connection with legal work, while in relation to sickness and sick people the term specialist is generally used. Closer consideration might lead to the acceptance of the following definitions: The *expert* is one who, on account of intensive study, mental capacity, and experience, is able to give an opinion which is presumably as good as any other opinion that can be obtained on the particular subject. It implies a familiarity with the literature, technic, and general relations of the subject. The same man, on account of his unusual capacity and intensive study, may be an expert in a number of different departments of knowledge or divisions of his particular profession. The *specialist* is one who, throwing aside other subjects, devotes himself exclusively to the development of a particular art or department of science, except in so far as such other subjects are necessary for the intelligent consideration of his own department. He is a specialist from the time he assumes this attitude toward his work. Presumably, in a reasonable length of time he becomes an expert.

From these definitions it is very evident that the expert is not necessarily a specialist, and the specialist not necessarily, at first, an expert. Looking over the field of medicine, which is the one that interests us most, we find that this works out in an interesting manner. Those who attain to the position of general medical consultant and general medical counsel are experts in all the important departments of medicine, particularly in the matter of diagnosis, prognosis, and a knowledge of the accepted modes of treatment. They fulfill a very important office in supplying by consultations to the general practitioner technical information as to his patients that, through youth, lack of ability, or lack of opportunity, he does not possess. The matured specialist in his own particular department can supply this same technical knowledge.

Now, wherein lies the difference? If medicine were a pure and exact science, there would be no difference. But medicine is an art, and, as far as the patient is concerned, the treatment is the most important outcome of it. In the art of treatment the general practitioner is often better than the general consultant, and gets along very well with the expert knowledge supplied by the consultant. But the matured specialist is better equipped still, because, in addition to expert knowledge in his own department, he has had time and opportunity to cultivate the art of treatment, and there is an assurance of the best possible results when he has the care of a patient; and he makes the best possible associate for the general practitioner when that seems best.

In a dim way all this is recognized in the modern movement toward specialism; but the relation between the general expert and the specialist, as outlined above, has not been clearly recognized.

OX BILE IN TREATMENT OF GASTRIC AND DUODENAL ULCER.

Francis W. Palfrey reminds us in the *American Journal of the Medical Sciences*, June, 1913, that the most frequent form of dyspepsia appearing before the clinician is that characterized by "sour stomach" and "heart burn," or pain after eating. These are usually regarded as cases of overacidity, but while many of these patients show an excess of acid in the test breakfast withdrawn after an hour, in many others the contents are normal. It has been demonstrated that many of the more severe of these cases are caused by gastric or duodenal ulcers, but this cannot be said truly of all, and an uncertain diagnosis of overacidity or ulcer is the usual routine practice. The patient is given suitable directions and diet, and an alkali to be taken as a palliative when necessary; but in many cases improvement does not follow. The writer suggests that in overacidity and in gastric and duodenal ulcer the symptoms are due, in part at least, to delay in the neutralization of the acid contents discharged into the duodenum. Theoretically the administration of ox bile pills (salol coated) should correct this fault. Empirically they seem to relieve the pyrosis and pain after eating; in cases of gastric and of duodenal ulcer their use has been followed by improvement. This method of medication is a practical application of the teachings of Cannon and of Pfaff, to whom the writer accords all credit.

Obituary.

FRANK HARTLEY, M. D.,

New York.

Dr. Frank Hartley died on June 19th, at his residence, 66 West Forty-ninth Street. Born on June 10, 1856, he received his education at Princeton University and the College of Physicians and Surgeons (Columbia University), graduating as M. D. in 1880. He then served as interne at Bellevue Hospital. From 1882 to 1884 he took a postgraduate course in Vienna, and returning to New York, commenced practising here. Doctor Hartley was connected with several hospitals, and had been professor of clinical surgery at the College of Physicians and Surgeons (Columbia University) since 1900. He contributed largely to the medical journals of this country, and was well known as the originator of the intercranial method for the cure of trigeminal neuralgia. The JOURNAL loses a highly esteemed contributor.

News Items.

South Dakota State Medical Association.—At the recent annual meeting of this association, held in Vermillion, S. D., the following officers were elected: President, Dr. Frederick A. Spafford, of Flandreau; first vice-president, Dr. Fred Treon, of Chamberlain; second vice-president, Dr. J. B. Vaughn, of Castlewood; secretary-treasurer, Dr. Robert D. Alway, of Aberdeen.

Maine Homeopathic Medical Society.—At the annual meeting of this society, held in Rockland on June 10th, the following officers were elected: President, Dr. George H. Rand, of Livermore Falls; vice-presidents, Dr. H. H. Plummer, of Union, and Dr. L. A. Brown, of Portland; recording secretary, Dr. J. H. Haywood, of Biddeford; corresponding secretary, Dr. Carrie Newton, of Brewer; treasurer, Dr. William S. Thompson, of Augusta.

Southwestern Virginia Medical Society.—The annual meeting of this society was held in Roanoke on Tuesday and Wednesday, June 3d and 4th, under the presidency of Dr. J. T. Graham. The following officers were elected: President, Dr. John A. Tipton, of Hillsville; first vice-president, Dr. R. H. Wooling, of Pulaski; second vice-president, Dr. A. F. Horne, of Glade Springs; secretary and treasurer, Dr. A. B. Greiner, of Rural Retreat. Marion was unanimously selected as the place of the next meeting.

New Officers of the American Medical Editors' Association.—At the annual meeting of this association, held in Minneapolis on June 10th, the following officers were elected for 1913-1914: President, Dr. E. A. Van der Veer, *Albany Medical Annals;* first vice-president, Dr. H. Edwin Lewis, *American Medicine;* second vice-president, Dr. Seale Harris, *Southern Medicine;* secretary and treasurer, Dr. Joseph MacDonald, Jr., *American Journal of Surgery;* executive committee, Dr. C. F. Taylor, Dr. D. O. English, and Dr. W. C. Abbott; publication committee, Dr. H. Edwin Lewis, Dr. Charles Wood Fassett, Dr. A. S. Burdick, Dr. James P. Warbasse, and Dr. J. MacDonald, Jr.

Right of Health Department to Confiscate Milk.—The right of the Department of Health to destroy or confiscate milk without notification of the owner, and without giving him an opportunity to defend the purity of his product has never been tested legally, although it has at times been the subject of comment and discussion. A decision, handed down May 12, 1913, by the Supreme Court of the State of Wisconsin, upholds the Department of Health in such confiscation when milk is adulterated or below standard. As a matter of fact, at the present time the department confiscates and destroys only when milk is above a certain temperature or when it contains visible dirt, these two points being capable of immediate and satisfactory demonstration. In cases where adulteration is suspected, samples are taken and submitted to chemical analysis and, upon proof of adulteration, the dealer is prosecuted. The opinion of the Milwaukee court was delivered by Mr. Justice McKenna and affirmed the judgment of the Circuit Court for Milwaukee County, from which the plaintiff had appealed.

Division of Infectious Diseases of the Department of Health.—For a number of years the supervision exercised by the Department of Health over scarlet fever, diphtheria, measles, and other contagious diseases of serious importance was conducted through the Division of Contagious Diseases. When, however, in 1905, the department decided to exercise a more thorough control over tuberculosis, a new division, styled the Division of Communicable Diseases, was organized, and to this was later assigned the supervision of typhoid fever, venereal diseases, and some others of communicable nature. It will thus be seen that for several years work quite similar in character was performed by two divisions, and it was finally decided at the meeting of the Board of Health, held March 25th, to combine them and thus create a new division, to be known as that of infectious diseases. At a meeting of the board of health of the Department of Health, held May 6, 1913, a resolution was adopted in accordance with that of March 25th, establishing a Division of Infectious Diseases, and detailing Dr. John S. Billings as director of the new division, and on May 21st an executive order of the Commissioner defined the duties of the officials and employees of the new division.

Personal.—Dr. Elias Potter Lyon, dean of the medical department of the St. Louis University, has been elected dean of the medical department of the University of Minnesota, Minneapolis, to fill the vacancy caused by the recent resignation of Dr. F. F. Wesbrook, who is leaving Minneapolis to become president of the new University of British Columbia, which is being established in Victoria.

Dr. William Palmer Lucas, clinical instructor of pediatrics at the Harvard Medical School, has been appointed professor of pediatrics in the medical department of the University of California.

Dr. F. A. Kraft, health commissioner of Milwaukee, Wis., was reelected president of the Wisconsin State Eclectic Medical Society, at the annual meeting of the society held in Milwaukee on June 11th.

Dr. B. M. Allen, assistant professor of anatomy in the University of Wisconsin, has been elected head of the department of zoology in the University of Kansas, to succeed Professor C. E. McClung, who a year ago became head of the department of zoology in the University of Pennsylvania.

Dr. A. C. Abbott, Pepper professor of hygiene and bacteriology, University of Pennsylvania, has been appointed a delegate to the Fourth International Congress of School Hygiene, to be held in Buffalo, N. Y., August 25th to 30th next.

International Congress for Neurology, Psychiatry, and Psychology.—Announcement is made by the Neurological Society of Switzerland that a meeting of the International Congress for Neurology, Psychiatry, and Psychology will take place in Berne, from September 7 to 12, 1914. The organizing committee in Berne is very desirous of assuring a high scientific value to this meeting, and to this end it appeals to the scholars of all the countries working in the fields of neurology, psychiatry, and psychology for their support and collaboration. At this congress psychology as a science indispensable to every neurologist will be considered, but it will not include discussions on the treatment of the insane, as that branch of psychiatry will be discussed at special congresses of psychiatry, one of which is to be held in Moscow this year. The committee will at a later date communicate its final arrangements concerning the organization of the congress of 1914, the composition of the national committe of patronage, of the international committee of propaganda, and also the list of questions to be submitted. The officers of the committee are: Prof. Dr. Dubois, of Berne, president; Prof. Dr. von Monakow, of Zürich, and Dr. P. L. Ladame, of Geneva, vice-presidents; Dr. R. Bing, of Basle, substitute; Dr. L. Schnyder, of Berne, and Dr. O. Veraguth, of Zürich, secretaries.

Medical Interne, Government Hospital for the Insane.—The United States Civil Service Commission announces an open competitive examination for medical interne, for both men and women, on July 2, 1913, at various places in the United States, and from the register of eligible persons resulting from this examination, certification will be made to fill a vacancy in this position in the Government Hospital for the Insane, Washington, D. C., at $900 per annum, with maintenance, and vacancies as they may occur in positions requiring similar qualifications, unless it is found to be in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion. The positions are tenable for one year, and pay $75 a month and maintenance. At the end of six months, however, during which time a postgraduate course in mental and neurological diagnostic methods, etc., is given, an examination will be held, and promotions to the next grade, junior assistant physician, made. Beyond this there is regular advancement for men whose services are satisfactory. The Government Hospital for the Insane has over 2,000 patients and about 750 employees to care for. In addition to the general medical practice offered, the scientific opportunities are excellent and the clinical opportunities in neurology and psychiatry are unsurpassed. Both men and women will be admitted to this examination. Applicants must be unmarried, and twenty years of age, or over, on the date of examination. The examination is open to all persons who are citizens of or owe allegiance to the United States and who meet the requirements. Persons who meet the requirements and desire this examination should at once apply to the United States Civil Service Commission, Washington, D. C., for application and examination Form 1312.

The American Medical Association,

Sixty-fourth Annual Meeting,

MINNEAPOLIS, JUNE 16 TO JUNE 20, 1913.

(*Continued*)

The House of Delegates.

(*Concluded.*)

MONDAY, JUNE 19TH.

After the roll call the minutes of the last meeting read and approved.

Election of Officers.—The following nominations for president were made and seconded: A. B. Ellis, of California; W. N. Wishart, of Indiana; W. L. Rodman, of Pennsylvania; V. C. Vaughan, of Michigan; J. D. Devor, of Pennsylvania.

The first ballot resulted as follows: Wishart, 32; Devor, 15; Ellis, 17; Vaughan, 24; Rodman, 25.

Doctor Devor drops out.

Second ballot: Wishart, 39; Ellis, 17; Vaughan, 27; Rodman, 33.

Doctor Ellis drops out.

Third ballot: Wishart, 40; Vaughan, 40; Rodman, 36.

Doctor Rodman drops out.

Fourth ballot: Wishart, 53; Vaughan, 63.

Doctor Vaughan declared elected.

Dr. Walter Conway, of New Jersey, was unanimously elected first vice-president.

Dr. T. B. Coleman, of Georgia; Dr. S. G. Kahn, of Utah; Dr. F. C. Todd, of Minnesota, were nominated for second vice-president. The first two withdrew in favor of Doctor Todd, who was declared elected.

Dr. S. G. Kahn, of Utah; Dr. Lillian South, of Kentucky, nominated for third vice-president. Doctor Kahn's name was withdrawn and Doctor South was declared elected.

Dr. S. G. Kahn, of Utah, was unanimously elected fourth vice-president.

Dr. Alexander R. Craig, of Chicago, was reelected secretary.

Dr. William A. Pusey, of Chicago, was reelected.

Dr. W. W. Grant, of Denver, was elected to succeed himself on the board of trustees.

Dr. F. J. Lutz, of St. Louis, was elected to succeed himself on the board of trustees.

Dr. C. E. Cantrell, of Greenville, Texas, and Oscar Dowling, of Shreveport, La., were nominated to succeed C. E. Cantrell on the board. The vote by ballot resulted: Cantrell, 51; Dowling, 60.

Doctor Dowling declared elected.

To succeed the late Dr. C. A. Daugherty, of South Bend, Ind., H. L. Elsner, of Syracuse, N. Y.; Thomas McDavitt, of St. Paul; S. D. Fairchild, of Iowa; J. R. Eastman, of Indianapolis, were nominated. The first ballot resulted: Elsner, 21; McDavitt, 35; Fairchild, 23; Eastman, 28.

Doctor Elsner drops out.

Second ballot: McDavitt, 54; Fairchild, 19; Eastman, 34.

Doctor McDavitt was declared elected.

The president, Doctor WITHERSPOON, appointed Dr. A. B. Cooke, of Nashville, Tenn., to succeed himself on the judicial council, and the House of Delegates ratified this action.

The president appointed Dr. W. S. Rankin, of North Carolina, to succeed Dr. J. N. McCormack, of Nashville, on the Council of Health and Public Instruction. Ratified.

The president appointed Dr. H. D. Arnold, of Boston, to succeed Dr. V. C. Vaughan on the Council on Medical Education. Ratified.

Doctor CULLEN, of Baltimore, asked for a few minutes for Samuel Hopkins Adams, who was received with much enthusiasm. He spoke on quack advertising, and said that the patent medicine business was one tenth medicine and nine tenths advertising. The newspapers were almost ready to throw out medical advertising, and he hoped that every member of the American Medical Association would exert all his moral influence to accomplish this end.

Proposed Monument in Honor of Heroes of Preventive Medicine.—The board of trustees offered a resolution, which was adopted, that a monument be erected by popular subscription to commemorate the services of Gorgas and others, who risked their lives for the cause of preventive medicine.

Admission of Porto Rico Physicians.—Doctor LAMBERT, of New York, offered a resolution, which was adopted, that the physicians of Porto Rico be admitted to the American Medical Association as members of constituent societies.

Gold Medal Awarded.—The Committee on Awards announced that the University of Tulane's exhibit of malarial plasmodia was the winner of the gold medal.

Place of Next Meeting.—The Committee on Transportation and Place of Session announced invitations from Atlanta, Ga., Atlantic City, Chicago, Louisville, New Orleans, New York and Washington.

Doctor POPE, of Louisville, made an eloquent appeal on behalf of that city.

The committee recommended Atlantic City as the most desirable meeting place, and the report with this recommendation, was adopted.

Report of Sections.

SECTION IN PRACTICE OF MEDICINE.

TUESDAY, JUNE 17TH.

Chronic Arthritis.—Dr. LEONARD W. ELY, of Denver, believes that as there are no accepted measures in the present treatment of chronic arthritis, the condition will ultimately come into the domain of the internist. There is no distinctive train of symptoms belonging to any one group

A. W. HEWLETT, M.D.,
of Ann Arbor, Mich., chairman of the Section in Pathology and Physiology.

of the chronic arthritides, and the exact diagnosis must therefore depend upon the demonstration of the individual etiological factor. The pathological changes in most chronic joint conditions is, the author believes, very similar, resulting in proliferation of the synovia, followed by atrophy of the cartilage and bone, and finally by their destruction. Clinically, mere examination of the affected joint alone cannot suffice for a diagnosis, but all relating factors must be taken into account. In that great group of arthritides referred to as "metabolic" the cause is not yet known, and they may all prove to be infectious in origin. He considers syphilitic arthritis by no means rare. In his hands mercury and salvarsan have given better results than potassium iodide in this group. Chronic progressive polyarthritis furnishes a field for much patient study. The great thing here is to seek out the primary focus. This is frequently the tonsils, but may also be the ear or the sinuses, the appendix or the intestinal tract. So important a part do the tonsils play that their removal in any obscure case of chronic arthritis may well be recommended as a routine measure.

In the course of the discussion Dr. Richard Cabot, of Boston, stated that he personally had not seen any of these cases cured by removal of the original foci of infection and that he was very anxious to see some.

Dr. J. L. Miller, of Chicago, believed that foci of infection in the future are going to prove to be *the* great cause of joint troubles. He begged to inform Doctor Cabot that he had seen excellent results in the joint condition follow tonsillectomy.

Remote Effects of Lesions of the Prostate and Deep Urethra.—Dr. Thomas McCrae, of Philadelphia, holds that both functional and organic symptoms may follow to a far reaching degree lesions of the prostate and deep urethra. Under the first, the so called "neurasthenic state" is by no means rare. Referred pains, most varied in character, are not infrequent. Among such are: 1. Pain in the kidney region simulating renal calculus; 2, pain in the back; 3, pain in the abdomen. In one patient with attacks of severe abdominal pain lasting from fifteen to thirty minutes and accompanied almost by collapse, the cause was found to be a swollen and inflamed verumontanum; 4, pain in the hip joint or transmitted down the sciatic nerve; 5, pruritis ani. Under organic conditions, arthritis, and particularly spondylitis, is often secondary. Whether lesions of the prostate may not affect the myocardium is seriously to be considered, as the writer, with Dr. Hugh Young, of Baltimore, has frequently seen the condition of the heart improve following operations upon the prostate. Cardiac arrhythmias with anginal pains and "anxiety neuroses" may be caused by prostatic and urethral lesions. He desires in particular to draw attention to the frequency with which local lesions may cause general symptoms in no way suggestive of the prostate and deep urethra, so that these possible sites of infection must always be borne in mind.

Dr. Hugh Young in discussing Dr. McCrea's paper wished to emphasize the necessity of more frequent and more careful rectal examinations with particular reference to the prostate. The prostate just as much as the tonsils and intestinal tract deserved attention as a cause of referred and absorptive conditions. A much larger number of men than is generally supposed have chronic inflammation of the prostate.

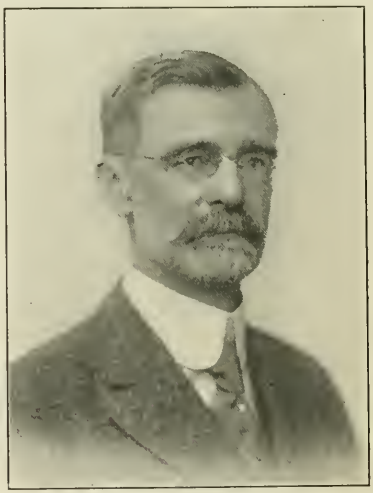
Dr. J. M. Anders, of Philadelphia, stated that in the absence of symptoms and history of gonorrheal infection it did not do to exclude diseased conditions of the prostate and deep urethra, as it has been shown that the colon bacillus and the streptococcus may be causes as well as the gonococcus.

Studies in Uric Acid in the Blood and Urine, with Special Reference to the Influence of Atophan.—Dr. James S. McLester, of Birmingham, Ala., believes that atophan causes a decrease of uric acid in the blood, with an increase on the other hand, of this substance in the urine, together with a decided increase in the total quantity of the urine output. He advocates, therefore, the employment of atophan in gouty and "uric acid" states

In the discussion, Dr. W. S. Thayer, of Baltimore, stated that undoubtedly gout was more common in the United States than was ordinarily believed, and that a rapid method of estimating the uric acid in the blood should prove to be of considerable value.

Clinical Notes on Patients from the Middle West Affected with Entamebæ.—Dr. H. Z. Giffin, of Rochester, Minn., has found that these organisms were relatively common in persons living in the Middle West. Infection with *Entamœba tetragena* more common than *Entamœba histolytica*. Among the symptoms dependent on their presence are diarrhea, bloody stools, abdominal pains, and nausea. The eosinophile count is low as a rule. The entamebæ are easily found by routine examinations of the stools, and their presence in any individual is distinctly detrimental to the general health. Results of treatment are difficult to state, but in severe cases enemas of coal oil (kerosene) had been attended with very good results.

Value of Tuberculin in the Early Diagnosis of Tuberculosis.—Dr. V. C. Vaughan, Jr., of Detroit, believes that the interpretation of the results from the use of



HOWELL T. PERSHING, M. D.,
of Denver, Col.; chairman of the Section in Nervous and Mental Diseases.

tuberculosis is most important. That certain patients do not react to its injection or the ophthalmo reaction is explained as a lack of sensitization. Therefore a negative reaction at first injection is of no value in diagnosis. The ophthalmo reaction has not given any ill results, and is used in many cases. Sensitization is brought about by a preliminary tuberculin instillation and secondary reaction is often found to be positive in previous negative tests. In thirty-five suspicious cases with a negative first examination, thirteen gave a positive test on second instillation and twenty-one failed to give a positive reaction on either first or second trials. Of these twenty-one thirteen are now known to be positively tuberculous. Radiographs were shown of a number of cases, both normal and tuberculous where the patients failed to give a reaction at the first or second attempts. The speaker concluded: 1. The ophthalmo reaction, when positive, is strong confirmatory evidence. 2. A negative ophthalmo reaction is of no value. 3. A negative result on first instillation and a secondary positive reaction is strong evidence against an active lesion. 4. A negative result on first and second trials is of no value.

Dr. R. Cabot, of Boston, condemns the use of the ophthalmo reaction. A von Pirquet is of value in children only; possibly a negative result may be serviceable in some adult cases. He would make use of a von Pirquet test directly over a diseased joint, as a knee. He condemns the term of "calcified glands" in chest radiographs and recommends the use of such an expression as the "x ray brings out a shadow."

Dr. C. L. Minor, of Asheville, N. C., thinks the von Pirquet reaction should be used in pediatrics only. He would not employ the Calmette test.

Dr. F. M. Pottenger, of Monrovia, Cal., believes that the subcutaneous tuberculin reaction may be of value in demonstrating an active or old lesion. He has found that active cases give a prompt and more decided disturbance. He urges the combination of all the available methods in making a diagnosis of tuberculosis, cautioning against a positive opinion in any single positive tuberculin test.

Doctor Dunham, of Cincinnati, maintains that the radiograph is often the means of early definite diagnosis of pulmonary lesions.

Doctor Vaughan, in closing, defends the ophthalmo reaction, stating that he has had no ill results, and advising the most careful sterilization of material.

Artificial Pneumothorax for Advanced Pulmonary Tuberculosis.—Dr. C. L. Minor, of Asheville, N. C., has used the "operation" of injection of nitrogen in twenty desperate cases. Of these he states that three have been

HENRY D. CHAPIN, M. D.,
of New York; chairman of the Section in Diseases of Children.

W. JARVIS BARLOW, M.D.,
of Los Angeles, Cal.; chairman of the Section in Practice of Medicine.

benefited sufficiently to bring them out of the hopeless to the hopeful class. One case he expects to cure. His failures he ascribes to dense adhesions, puncturing old abscesses, the lighting up of lesions in the opposite lung, or circumstances which for any reason make a continuation of the treatment impossible.

Of the three cases so much improved one has had no treatment for six months, and the others for three and two months respectively. The last case has had persistent hemorrhages, which are controlled by this method.

Dr. S. A. Knopf, of New York, has used the operation in a large number of cases, and in one of his series twenty-five per cent. of the patients showed improvement. He believes that only certain cases should be subjected to the injections, and those where one has absolute control of the case for a long time. Oxygen is preferred as the agent employed, and all patients are warned beforehand that accidents may happen.

Doctor Collins, of Denver, recommends radiographs before and after the treatment, and does not believe that lesions in the opposite lung are a contraindication.

Doctor Dunham always wants to ascertain, if possible, whether the pleura can be entered, and whether the other lung will do the work required. He advises stereoradiographs before and after the operation, for one reason, that it is difficult to interpret the physical findings after collapse. He cautions the employment of too much gas.

Dr. Mary E. Lapham, of Highlands, N. C., would use oxygen in all cases and has seen very good results in four cases.

Blood Pressure Studies in Tuberculosis in Great Altitudes.—Dr. LeRoy S. Peters and Dr. E. S. Bullock, of Silver City, N. Mex., present observations covering six years, and 600 cases are reviewed. The observations have been of uniform character. There is a fall in pressure on first arrival and a decided raise after continued residence. This is true of healthy as well as tuberculous persons. They believe this rise to be a therapeutic asset, and the study of blood pressure to be valuable in prognosis. They conclude: 1. Blood pressure increases in great altitudes. 2. This tendency is to increase up to a certain point in all individuals. 3. Degree of involvement has no relation to the blood pressure. 4. There is a distinct relation between the blood pressure and the amount of toxemia.

Dr. J. Ritter, of Chicago, believes that blood pressure readings are often a great aid in doubtful cases, and that in early cases a low pressure is the rule.

Dr. R. L. Barns, of Salt Lake City, in examining a large number of students at sea level and an altitude of

A. F. JONAS, M. D.,
of Omaha, Neb.; chairman of the Section in Surgery.

4,500 feet has found no increase in pressure in the latter circumstances.

Rest and Repair in Pulmonary Tuberculosis.—Dr. J. W. Flinn, of Prescott, Ariz., advises strongly in favor of rest in bed for one month or more for every case of tuberculosis, whether there is an increased temperature or not. In every case specific instructions regarding the exact degree of rest to be maintained should be given, according to the individual requirements of the patient. The pulmonary infection being a systemic intoxication, the later cases he puts to bed for six months or more. He stoutly upheld his theory.

WEDNESDAY, JUNE 18TH.

A Comparison between Jacquet's Sphygmograph and Crehore's Micrograph in Cardiac Tracings.—Dr. Alexander Lambert, of New York, shows numerous tracings taken with the two instruments and concludes that the Crehore micrograph is both more accurate and delicate than the Jacquet sphygmograph.

Clinical Aspects of Overtension.—Dr. Joseph L. Miller, of Chicago, considers renal changes the chief factor. Marked renal changes may occur with apparently normal urine. Nervous influences are also a definite factor.

Clinical Significance of High and Low Auscultatory Pulse Pressures.—Dr. Willard J. Stone, of Toledo, Ohio, explains that the pulse pressure is the difference between the systolic and the diastolic pressures. He has found in sixty-one normal individuals the average systolic blood pressure to be 120 and the diastolic pressure eighty. He emphasizes the importance of determining the diastolic pressure in cases of excessive tension and states that a continued diastolic pressure of from 100 to 110 is of more significance in showing the ability of the myocardium to carry its "load" than is a systolic pressure of 160. He further believes that the combination method by palpation and auscultation is much to be preferred in the determination of blood pressure to the palpation method alone.

Perpetual Arrhythmia.—Dr. H. A. Freund, of Detroit, discusses certain anatomical and clinical features of perpetual arrhythmia and demonstrates electrocardiographic tracings. The slow forms of arrhythmia without cardiac compensation require no treatment, but in other forms rest in bed with digitalis are of great importance.

Dr. L. M. Warfield emphasizes the need of more attention to the diastolic pressure. A gradually ascending or a continuous high diastolic pressure, as it measures peripheral resistance, he believes to be more important in the prognosis of excessive tension than a continued high systolic pressure. It is to be noted that in taking the diastolic pressure by the auscultatory method it is not where the sound is completely lost which should be regarded as the index, but where the change from a clear to a dull tone occurs, or, in other words, where the third tone suddenly becomes dull.

Doctor Elsner thinks the saying of Stokes that "the key of the heart rests in the heart muscle" is just as true to-day as it ever was. In cases of moderate overtension without albuminuria what the patient needs chiefly is to be reassured, but in high pressures (190-210), whether albumin and casts are present or not, the patient requires the closest watching on the part of the physician. He believes that the iodides, given over long periods of time, are sometimes of value in excessive tension. The nitrites relieve the subjective symptoms to some extent, but have no lasting effect on the increased tension itself.

Dr. W. S. Thayer gives a note of warning as to the overuse of the nitrites in cases of marked overtension attended with decided renal changes. In such cases, he believes, uremia may be brought on by their excessive use.

Diseases of Porto Rico.—Dr. Elmer F. Otis, of Penuelas, Porto Rico, mentions a considerable number of diseases occurring in Porto Rico, and refers particularly to the hookworm disease and the excellent results which follow energetic treatment.

Study of a Case of Congenital Hemolytic Jaundice.—Dr. E. T. F. Richards and Dr. W. C. Johnson, of Detroit, report this case In a woman of twenty-three years jaundice has been present since birth, but is not accompanied by itching, bradycardia, or clay colored stools. There is marked splenomegaly, urobilinuria, and an anemia with characteristic blood changes. The writers draw especial attention to the changes in the erythrocytes: Marked microcythemia, anisocytosis, anisochromia, Howell-Jolly bodies, large coarse basophile granules, and the "granular corpuscles" of Chauffard. The test of the osmotic resistance of the erythrocytes is a most important point in the diagnosis of hemolytic jaundice. In the present case the red cells show marked fragility, hemolysis beginning in 0.7 to 0.8 per cent. sodium chloride, as compared with normal red cells, in which hemolysis does not take place until 0.425

HUGH H. YOUNG, M. D.,
of Baltimore, Md.; chairman of the Section in Genitourinary Diseases.

per cent. or 0.45 per cent. of sodium chloride. Attention is directed to the remarkable results following splenectomy in three or four cases of the acquired type reported by Banti and others, but the wisdom of advocating such a measure in the congenital form is to be considered an open question.

Joint Meeting with the Section in Pharmacology and Therapeutics.

Symposium on Serums and Vaccines—Federal Control over the Manufacture of Serums and Vaccines.—Dr. JOHN F. ANDERSON, of Washington, D. C., states that since the Public Health Service has maintained its strict supervision over the manufacture and use of such products, a marked improvement has taken place in the vaccines put on the market. Diphtheria antitoxines are now of higher potency, and serum reactions are comparatively rare. A set standard for antitetanic serum has been also established. The Public Health Service has furthered the use of antirabic virus. It is no longer necessary for a patient to go to a Pasteur laboratory for treatment, for the virus, as now prepared, may be shipped long distances. After a firm has been licensed to manufacture and sell serums and vaccines, the Hygienic Laboratory frequently examines the products as they are obtained on the market, and if such do not conform to all the requirements of the law, the manufacturer can be compelled to withdraw them from the market. If the condition is not then corrected, the license can be suspended or even revoked. The writer makes a special plea that all efforts should be made to obtain legislation which would give to the Public Health Service the power to test by experimental work the therapeutic value of all such products. At the present time the government gives no guarantee of the therapeutic value of a product, but simply states that it has been examined as to potency, impurities, bacterial contamination, etc.

Treatment of Pneumonia by Specific Serums.—Dr. RUFUS I. COLE, of New York, classifies pneumococci into four groups. Against two of these (Groups I and II) there is experimental evidence to show that active sera have been obtained. In Groups III and IV this is not yet the case. The serum to be effective in pneumonia must be given 1, in large amounts, 2, early in the disease, and 3, it must be the appropriate serum against the special type of pneumococcus present; which latter is determined in the Rockefeller Institute by cultures from the sputum and blood. In 13 cases of pneumonia in humans infected with Type I, only one patient died in the course of thorough treatment with the serum. The author believes that his experimental work justifies great hopes for the future treatment of pneumonia with appropriate serums.

GUY L. KIEFER, M. D.,
of Detroit, Mich.; chairman of the Section in Preventive Medicine and Public Health.

R. L. WILBUR, M. D.,
of San Francisco, Cal.; chairman of the Section in Pharmacology and Therapeutics.

Antistreptococcus Serum.—Dr. G. H. WEAVER, of Chicago, states that the opsonins are taken to be the potent portion of the serum. In order to be most effective the antibodies or opsonins especially in this serum must come in contact with the streptococci in large quantities, and in a short time. Much larger doses than formerly are now recommended, from fifty to 100 c. c. rather than ten c. c. etc., as before. Intravenous and intramuscular rather than subcutaneous administration is also recommended. Results are seen at once after intravenous, and in about three hours after intramuscular injection. On the other hand, twenty-four hours is the usual interval for subcutaneous injections to show reactions. A drop of the opsonic index or a persistent high white cell count are taken to point to the need of a renewal of the injections. Persistence in the use of the serum is necessary, and it is, of course, also essential that an active serum should be employed. The fact that the opsonins are the active portion of the serum allows a very accurate method of testing the activity of any given serum. This treatment should be given only in definite cases; the diagnosis being based on bacteriological analysis alone. The technic of administrations is difficult, and as yet not practicable outside of a hospital and then only where there is a good laboratory in connection.

The Treatment of Lobar Pneumonia with Partially Autolyzed Pneumococci and Pneumococcus Extracts.—Dr. E. C. ROSENOW, Chicago, says that in the work of the last four years a strain of pneumococci of high virulence has been obtained by suspending the dead bacteria in salt solution and autolyzing in a centrifuge. Autolyzed or detoxicated pneumococci given in immense doses (billions rather than millions) to early pneumonia patients produced considerable benefit clinically, but in later cases the effect was doubtful. In the last three years fifty cases have been treated each year. Of these, seventy-five patients, or twenty-two per cent., died, while forty per cent. of control cases (untreated with serum) died. The method now used is to give one dose of large number of the detoxicated bacteria, and not daily small doses, as previously.

Typhoid Vaccination in the Army in 1912.—Dr. F. F. RUSSELL, Washington, D. C., states that in 1912 this vaccination was compulsory throughout the entire army.

HIRAM WOODS, M. D.,
of Baltimore, Md.; chairman of the Section in Ophthalmology.

A single strain of especially adapted typhoid organisms is used for the troops. Iodine is employed for sterilizing the skin of the arm and from two to three injections are made at intervals. One injection is not considered sufficient. Ninety-seven per cent. of the men do not have "troublesome" reactions; three per cent. being relieved from duty for usually only short periods. The length of the immunity is not known, and statistics must later demonstrate the time limit. Vaccination for smallpox is done at the same time and the recommendation is made that both be repeated in four years. After vaccination it is absolutely necessary that the diagnosis of typhoid fever be made by blood cultures only.

THURSDAY, JUNE 19TH.

Gastroscopy, with Demonstration.—Dr. Henry H. Janeway, of New York, demonstrates a gastroscope with rigid tube on a patient under local anesthesia, the instrument affording a good view of the various portions of the cardiac end of the stomach. In connection with the demonstration, he speaks of the advantages of stomach examinations, especially as regards the cardia, where the bismuth radiographs are of little value. To avoid risk to the patient great care should be observed in employing gastroscopy. Colored lantern slides are shown of the several views necessary for a thorough search of the cardia.

The Water Trap Stomach; Symptomatology, Diagnosis, and Treatment.—Dr. G. Reese Satterlee and Dr. L. F. Le Wald, of New York, consider this condition as a definite clinical and morbid entity, and not merely a phase of the gastroptotic or neurasthenic type. The essential point in the differentiation is that radiography shows the greater and lesser curvature to be below the umbilicus, while the pylorus proper is found more or less in its normal situation. The symptomatology of secondary importance corresponds closely with the usually accepted symptom complex of a gastroptosis. The treatment of these cases is surgical and consists in gastroplication to bring the portions of the greater and lesser curvatures up to a point above the midabdominal line. Illustrative lantern slides show that in this condition there is not the usual picture of general abdominal relaxation. There is always a large bismuth residue at the expiration of six hours, and the water trap stomach is not a particularly dilated stomach. Normal stomachs often show the greater curvature below the umbilicus, but not the lesser curve also.

Points to Be Derived from Roentgenoscopy of the Gastrointestinal Tract.—Dr. R. Walter Mills, of St. Louis, demonstrates lantern slides which are reproductions of x ray plates. Among the conditions shown is esophageal obstruction from diverticuli, carcinoma, cardiospasm, and aneurysm. The stomachs radiographed illustrate the fact that each individual has a contour and make up of stomach best suited to his needs.

The diagnosis of seventy-five per cent. of gastric ulcers can be aided by x ray pictures, which for the most part show definite changes in contour and motility. Radiographs also assist in diagnosticating tender spots in the gastroduodenal tract. The most aid, however, is afforded in the diagnosis of early and late carcinoma. In duodenal ulcer the diagnosis is not helped so much by the x ray. More study along these lines is needed, and conservatism should be exercised in the interpretation of the findings.

Dr. C. Jackson, of Pittsburgh, says that gastroscopy is as yet on a truly practical basis only in hospitals. The difficulties met with are, first, instrumental, and, second, technical and in the way of interpretation. Doctor Janeway has, in his perfected instrument, largely overcome the first difficulty. Experience and more than ordinary mechanical skill are required in the use of gastroscopy.

Doctor Draper, of New York, believes that the water trap stomach originates in some congenital defect. The chief factor in causing the symptomatology is much the same as in a condition of partial intestinal obstruction and is no doubt a disturbance of the enzymes. The relief of constipation so marked in cases of water trap stomach after operation is brought about by the passage of hormones, etc., through the intestinal canal in a normal way.

Dr. J. G. Cole, of New York, says that gastroscopy, properly performed, is one of the greatest aids in gastric diagnosis, and the findings with it so admirably complement those of the radiographer that the combination of the two methods excels all other means employed.

Dr. M. L. Graves, of Galveston, advises the greatest possible conservatism in x ray readings and believes that in every case all available modes of investigation should be employed. He recalls from his experience many cases of operation where any single factor, as the x ray or the clinical findings, would have missed the correct diagnosis.

Cause and Treatment of Diarrhea.—Dr. R. C. Cabot, of Boston, and Dr. Haven Emerson, of New York, base their conclusions on a study of autopsies each at the Massachusetts General Hospital and Bellevue Hospital, New York, and 750 clinical cases observed in the former hospital. The following cases were excluded: Below sixteen years of age—typhoid fever, tropical diarrhea, epidemic cases. Two main points were kept in mind: 1. What are the pathological lesions? 2. What the causative factors? It was found difficult to differentiate acute and chronic cases.

VIRGIL LOEB, M. D.,
of St. Louis, Mo.; chairman of the Section in Stomatology.

JOSEPH ZEISLER, M. D.,
of Chicago, Ill.; chairman of the Section in Dermatology.

and also that food as a factor is greatly overestimated. Ptomaine poisoning, while a very popular and fashionable cause of diarrhea, cannot be truthfully blamed, except very rarely. No cases of ptomaine poisoning were met with by them. There was usually some underlying, unrecognized cause, as obstruction, acute pancreatitis, etc.

The chart of causes brought out the interesting fact that in all the cases of actual tuberculous enteritis only about thirty per cent. of the patients complained of diarrhea. The frequency of diarrhea in achylia gastrica, its infrequence in mucous colitis, were striking. The investigation of the etiology of any diarrhea, the writers say, must include a good history and stool examination, especially for blood or pus, and not so much attention must need be given in trying to discover a faulty food. Rest in bed is a necessity in first investigation. As to the treatment, rest in bed often cures a diarrhea. Twenty-four hours' starvation and the usual purgation at the onset are advisable. Later, only introgenous diet, adding carbohydrates and fats as the case warrants. Daily normal saline flushing is of benefit. Silver nitrate is to be employed only if at a first trial this shows benefit. Emetin may be in amebic form and at times bismuth and salicylates are found efficacious. Possibly, cecostomy may be tried.

ROBERT LEVY, M. D.,
of Denver, Col.; chairman of the Section in Laryngology, Otology, and Rhinology.

Cerebrospinal Fluid in the Diagnosis and Treatment of Syphilis.—Dr. W. V. Brews, of Los Angeles, has found examination of the cerebrospinal fluid important in 1, preventing infection of the central nervous system; 2, in determining infection in this locality before parasyphilitic manifestations; 3, in eradicating syphilis and determining the final freedom of the system from the disease. Seventy patients were closely followed and the cerebrospinal fluid used for these purposes. It was found that this fluid often gave a positive Wassermann after repeated negative results from the blood. From three to thirteen salvarsan injections were given and a combination with mercury, rather than any other drug, was thought best. Further investigations along this line will be carried out.

Symposium on Leprosy— Dermatological Aspects of Leprosy.—Dr. Isadore Dyer, of New Orleans, describes

NEWTON M. SCHAFFER, M. D.,
of New York; chairman of the Section in Orthopedic Surgery.

the cutaneous lesions of leprosy and their differentiation from other skin conditions which they may sometimes resemble. Among the latter are lupus, syphilis, psoriasis and hypertrophic acne rosacea.

Clinical Aspects.—Dr. E. Boeckmann, of St. Paul, relates his experience with leprosy during twelve years in Norway, referring particularly to the symptoms dependent upon nerve involvement.

Bacteriology and Specific Therapy.—Dr. C. Duval, of New Orleans, contributes a scientific presentation of the cultivation and characteristics of the *Bacillus lepræ*.

Public Health Aspects of Leprosy in the United States.—Dr. Rupert Blue, of Washington, D. C., states that the collected statistics show leprosy to be on the increase. Some years ago a bill was introduced in Congress to provide a national leper hospital and it passed the Senate but not the House. The need of such an institution is even more acute to-day. Leprosy is more of a menace to the United States than is generally supposed. Because of our possessions and the intercourse between them and this country by soldiers, sailors, and civilians, and because of the long period of incubation in this disease, the introduction of a case of leprosy is fairly easy. In a number of the States leprosy is still not a specifically noticeable disease. The surgeon-general, therefore, because

of these and other reasons, makes an urgent plea for the establishment of a national leper hospitla.

Election of Officers.—Dr. Charles Lyman Greene, of St. Paul, was elected chairman of the section for the ensuing year, and Dr. Roger S. Morris, of Clifton Springs, N. Y., was reëlected secretary.

SECTION IN OBSTETRICS, GYNECOLOGY, AND ABDOMINAL SURGERY.

TUESDAY, JUNE 17TH.

Chairman's Address: Right Sided Overtension with Occasional Cardiac Dilatation as a Postoperative Complication.—Dr. F. F. Simpson, of Pittsburgh, Pa., calls attention to the greater operative risk of the patient whose heart muscle is weakened by various causes, such as hyperthyroidism, various toxines, anemia, etc. There is a possibility of such a heart being dilated by prolonged anesthesia; in which case the Trendelenburg position is to be resorted to and intravenous saline injections practised. He recognizes two groups: 1. Persistency of circulatory disturbance after operation, possibly followed by death. 2. Development of such disturbance in from twelve to eighteen hours after operation. Signs of such disturbance are rapid and sudden development of cardiac weakness, shown by rapid pulse, cyanosis and enlargment of right cardiac border. Parallel observations are to be made on cases with routine examination of heart and circulation in patients before and after operation, supplemented by the x ray. He has conducted experiments on dogs, both normal and thyroidectomized. The latter showed heart disturbances from the causes mentioned above, while normal dogs showed little change and rapid recovery. Doctor Simpson studied seventy-five patients with the x ray, before and after operation. There was increase of the vascular measurement in fifty-eight instances. Dilatation was found to begin usually in the large veins. His conclusion was that if the vascular measurements are not relatively greater than of the heart, there is no circulatory disturbance. Of twelve cases, twenty-four per cent. had circulatory disturbance when the vascular enlargment exceeded the cardiac. Right sided overtension is rarely serious as a post operative complication. It should be treated by elevation of the head of the bed and through judicious use of morphine.

Some Newer Methods of Reducing the Mortality of Operations on the Pelvic Organs.—Dr. G. W. Crile, of Cleveland, O., holds that while in the plain, uncomplicated operation for fibroid, chronic pyosalpinx, benign ovarian tumor, etc., the technic has been standardized and the results are everywhere good, operations are still formidable, which are performed on patients having a too high or too low blood pressure, the result of infection, hemorrhage, or other cause. The mortality rate would indeed be high were it based on such operations only. The experienced surgeon has learned to select his patient according to what he knows he is able to do; the handicapped patient, therefore, is often turned aside because, for want of method, the operation cannot be performed safely. It is the purpose of his paper to show that nearly all of these cases may be reclaimed, and patients safely operated upon. The clinical basis for this work is an analysis of the records of 8,962 abdominal operations. The dangers from high blood pressure are embolism, thrombosis, angina pectoris, and pneumonia. Low blood pressure, occurring from shock, anemia, or hemorrhage is more easily controlled. The factors in its production may be either physical or psychic. Ether is especially dangerous to such patients as it may dissolve the lipoids of the brain cells and also affect the red blood cells. Nitrous oxide should be used in preference, as it inhibits oxidation and conserves cells. Doctor Crile also advocates the use of anoci anesthesia by injection of 1-400 novocaine solution into the skin, fascia, and peritoneum, to block nervous impulses to the brain. In addition he advises the use of morphine, and even scopolamine. Tables showing graphically the effects of ether, nitrous oxide, and anoci anesthesia give a much lower pulse rate and less disturbance of the temperature and respiration with the latter. The mortality is also lower.

Postoperative Renal Infection.—Dr. H. D. Dawson, of New York, believes that this occurs more frequently than is generally supposed, and that it explains many otherwise unaccountable increased temperatures and cystic symptoms after operations. Renal infection is most frequent after those upon the intestinal tract, and the constipation of patients lying in bed, or the catharsis practised to overcome this, probably accounts for many of the colon bacillus infections. These renal injections are often very insidious, and usually there are but few urinary findings early. Three types of infection are recognized: 1. Hemotogenous, 2, lymphogenous, 3, ascending. The first and last are more common. The hematogenous variety probably arises from preexisting infection somewhere in the body.

Final Results Following Operations for Ectopic Pregnancy.—Dr. R. R. Smith, of Grand Rapids, Mich., reports the subsequent course of a considerable number of such cases in which the patients were operated upon over five years previously, special note being taken as to whether these women have borne children, or have had a repetition of their ectopic pregnancy. He questions whether the prevailing custom of leaving the opposite tube, if it be healthy, is a rational one. In his opinion, the age of the patient, her social condition, and the number of children she has already borne, together with certain other factors should determine whether the opposite tube should be left or removed. Of 193 patients, 141 were reported as having excellent, good, or fair health. Fifty-two of these patients had been made sterile at the time of operation, they must be excluded. Of the 141, forty-four had subsequent normal uterine pregnancies, and twenty-one had a second ectopic pregnancy. Of those above the age of thirty years, eighteen had children and fifteen repeated ectopic gestations.

The Movable Kidney.—Dr. J. H. Carstens, of Detroit, finds that various degrees of motility all produce symptoms to a greater or less extent, and that these are often referred to the stomach and nervous system. The condition is frequently found with a poor physique. It is sometimes caused by improper training or wrong mode of living at the time of puberty, and is caused also by accidents, heavy lifting, or falls. It is often found associated with general abdominal ptosis; when the rôle of the kidney in the train of symptoms is difficult to differentiate. The symptoms do not depend upon the amount of mobility of the kidney itself. Treatment by mechanical supports is of some benefit, but permanent relief can be received only by surgical fixation. A definite diagnosis must be made, and we must be sure that the symptoms present are due to the kidney condition and not to a general ptosis. In the operation the kidney must be freed of all adhesions to the peritoneum or intestine. He describes in detail the technic of the procedure. A lumbar incision is made, the fibrous capsule split upon the greater curvature of the kidney, and flap sutured under the lumbar muscles.

Further Points in the Sterility of Women.—Dr. Edward Reynolds, of Boston, believes that sterility is dependent on extremely small changes in the organs, on perversions of function, which are independent of the gross pathologies which create ill health. Sterilities may be divided into, 1, those dependent upon conditions of the secretions which render them hostile to the life or motility of the spermatozoon; 2, ovarian conditions which result in a failure in the release of the ovum. In the first group there may be altered conditions of the mucous membranes, altered conditions in the vagina, in the cervical relations, in the uterine and tubal mucous membranes. In the treatment, which consists in careful correction of the abnormal secretions, he emphasizes the importance of a minute diagnosis, and also of complete drainage. In the second, we may have alterations of the ovaries, such as thickened capsule, multiple retention cysts, and persistent corpora lutea; and a differential diagnosis must be made. In this connection he cites seven cases of persistent enlarged ovary, due to the presence of pathological corpora lutea; where the removal of the latter was followed by pregnancy. Various surgical procedures may be called for in the different conditions met with, and any anatomical defects observed should, of course, be corrected, if possible. In the several classes of sterility sexual perversions are quite common, and these should also be corrected.

Membranous Dysmenorrhea.—Dr. K. I. Saney, of Pittsburgh, regards the term "menstrual membrane" as a much better designation, from the pathological standpoint, than "membranous dysmenorrhea." Certain changes always take place in the endometrial stroma during the degenerative stage of the menstrual cycle. Structurally the

menstrual membrane is not distinctive, and it seems probable that it is only a phase of normal menstruation. It occurs much more frequently than is generally supposed, but only the severe cases associated with pain are recognized as the membranous dysmenorrhea" of the textbooks. In certain species of monkeys menstrual membrane is the usual physiological occurrence. He concludes that in human females it is relatively common, is not inflammatory, and is not attended by a high ratio of sterility.

WEDNESDAY, JUNE 18TH.

Prolapse of Uterus: Its Surgical Treatment.—Dr. FRANKLIN H. MARTIN, of Chicago, regards the Wertheim-Watkins operation as ideal for the treatment of prolapse in woman after the menopause, but thinks it not applicable during the childbearing period. In younger women he advocates the shortening, by the anterior vaginal route, of the vesicocervical bands and crossing them, thus joining a new support for the bladder, which is pushed back into the peritoneal cavity. The sacrouterine ligaments are then isolated and by means of an artery clamp, which is passed through the base of the broad ligaments, the ligaments are grasped and brought through the perforations and fastened to the anterior portion of the cervix. A proper perineorrhaphy must be done. He lengthens the posterior vaginal wall to release tension upon the cervix and the muscles between the rectum and vagina are restored. The levator ani must be completely restored to produce satisfactory results. Amputation of the cervix is avoided because it aids in preventing the uterus paralleling the vagina by acting as a lever upon a fulcrum.

Vaginouterine Prolapse and Its Effective Treatment.—Dr. E. E. MONTGOMERY, of Philadelphia, states that this is the form of prolapse where there is a hernia through the vaginal outlet, accompanied by the uterus, or the fundus may stay in position with elongation and thinning of the supravaginal portion of the cervix. In the majority of cases late in life the uterus may be removed by the vaginal route, the bladder and rectum widely separated, and the broad and round ligaments united in the median line to form a septum and floor for the bladder. Rectocele is prevented by rectovaginal interposition of the levator ani muscle. This operation has the following advantages: 1. Greater comfort to patient; 2, the bladder and rectum are brought into proper position and fixed. He does not advocate vaginal hysterectomy for all cases, but only for those specially selected cases where reposition of the uterus is useless, difficult, or dangerous.

Anatomy and Surgical Utility of the Sacrouterine Ligaments.—Dr. GEORGE B. SOMERS, of San Francisco, says that the ligaments of the uterus have been thoroughly studied in various animals and it is found that only those animals of upright position have uterosacral ligaments or their homologue. In the human female sacrouterine ligaments are anatomically made up of (a) musculofibrous peritoneum; (b) a fibroclastic layer; (c) a musculofascicular layer, passing from the peritoneum outward. The sacrouterine ligament is attached to the pelvic fascia, and when put upon the stretch forms folds in a direction toward the uterus. A few fibres also pass to the wall of the superior vaginal vault and tend to pull it upward. The writer pleases to call this sacrouterine ligament a "potential ligament," as it is transformed into a true, visible ligament when tension is placed upon it. The function of this ligament is to elevate and support. The lateral fibres upon contraction raise the uterus and they might be called the "levator uteri." The ligaments may be demonstrated by pulling the cervix downward and anteriorly. The writer then demonstrates by lantern slides his method of exposing these ligaments and of suturing them to the front of cervix. In this way the cervix is pulled backward and assists in keeping the corpus uteri in an anterior position.

A Study of the End Results of the Webster-Baldy Operation.—Dr. JOHN OSBORN POLAK, of Brooklyn, reports the result of 400 cases of Webster-Baldy operation, from January 1, 1908, to January 1, 1913, which have been kept under observation for from five months to five years. Twenty-four of the patients could not be traced. Of the remaining 376 women, 202 show anatomically normal pelves. Of these, 160 have had complete relief from symptoms, while thirty-nine show nothing upon examination but complain of pain, especially at the menstrual period. Two patients have died from other causes. Of the remaining 174 cases, fourteen patients had secondary operations. In some there was lateral deviation of the uterus, which may be due to faulty development or to faulty technic, as torsion of the ligament. When the ligaments are attached too low, the ovaries fall forward and downward and become adherent; or if attached too high they become adherent posteriorly to the uterus. Thirty two cases showed relapse, thirty women wore pessaries, eighteen received no benefit, ten had lateral deviation, sixteen, prolapse; two, anterior ovaries, and twenty-six thrombosis. Twenty bore normal children; thirty aborted. None had complications in labor, and only four had relapse following parturition. The success of the operation depends upon having to deal with a small uterus, cervix pointing backward, equal development of the ligaments, and upon careful technic. He concludes that the operation is indicated only when these conditions are present in selected cases. It should be avoided in those women who have varicose veins of the broad ligament, as there is great risk of causing thrombosis.

Tuberculous Salpingitis.—Dr. P. E. TRUESDALE, of Fall River, Mass., states that in 1,500 collected laparotomies, of which 600 were gynecological, there were sixteen patients with tuberculous salpingitis. The oldest was fifty-two; the youngest, sixteen. This affection is most common from twenty to thirty years of age. It is very frequently primary, there being no other demonstrable tuberculous focus. He advises removal of tubes unless there is a fibrous condition. This is the only form of salpingitis which does not seal the fimbriated end of the tube. It calls for conservative surgery without drainage, followed by the proper hygienic and dietary treatment. Results in sixteen cases: One patient died after operation from miliary tuberculosis; one died of secondary hemorrhage from wound; one died of pulmonary tuberculosis; two are in poor health. The others are apparently in good condition.

Infections in the Pelvis from a General Surgeon's Point of View.—Dr. JOHN B. MURPHY, of Chicago, considers only the postparturient infections. These should be regarded as any ordinary wound infection. The lesion may be at any part of the genital tract. The infection may spread by contiguity through the lymphatics, producing a lymphangitis, or the large blood sinuses may become the site of a septic thrombosis, with its sequelæ. Exudation may be with or without abcess formation. Peritonitis may result. These types may be distinguished by the character of the onset, and clinical course. Treatment should be based on the principles governing that of the same conditions in other portions of the body. We should not curette and loosen a septic thrombus, nor make new wounds which may become infected. Abscesses should be opened as soon as they form.

Cancer of the Stomach.—Dr. WILLIAM J. MAYO, of Rochester, Minn., considers this a curable disease. He compared the findings in 1,000 cases of carcinoma of the stomach with 1,000 of gastric ulcer, finding low acidity and absence of free hydrochloric acid in the former, and relatively high in the latter. Seventy-five per cent. of gastric carcinoma are located at the pyloric end, and ten per cent. in the cardia. Nearly all give a history pointing to antecedent ulcer or other stomach lesion. There is a definite history of ulcer in fifty per cent. An absolute diagnosis is not always possible, but we should suspect this condition early, so that operation may be of benefit. Two facts should be remembered as important for diagnosis: 1. The presence of a tumor; 2, remnants of food in the stomach ten or twelve hours after a test meal of half cooked rice and raisins. He gives the following results of operation: Mortality from exploratory operation, 0.6 per cent.; mortality from radical operation, ten per cent. in all cases; in early cases, about five per cent. Cures for five years have been twenty-five per cent., and for three years, thirty-eight per cent. In operating, a portion of the pancreas, if this is affected, may be removed and the closed duodenum sutured in this place. Moderate involvement of the pancreas does not necessarily preclude operation. Palliative operations also have a field of usefulness.

Cancer of the Uterus: Some Points to be Emphasized in the Early Diagnosis.—Dr. RUFUS B. HALL, of Cincinnati, urges that in a woman, say from thirty-seven to forty-seven years of age, any symptom referrable to a pelvic organ should be thoroughly investigated. The early

symptoms of carcinoma are frequently overlooked, such as 1 a slight watery discharge; 2, irritable bladder; 3, a drop or two of blood. The last is really not an early symptom, but, like the discharge with disagreeable odor, is one of the later symptoms. Pruritus frequently accompanies the discharge, even in the earliest stages. Early diagnosis of cancer in the body of the uterus is often neglected. There is a slight watery discharge and slight bleeding. The uterus is larger than normal, freely movable, and slightly tender. The slightest manipulation with the uterine probe causes bleeding. The curette should not be used for diagnosis unless absolutely necessary, and then the examiner, if possible, should be prepared for an immediate operation.

Theoretical and Practical Foundations of a Radical Operation for Carcinoma of the Cervix.—Dr. Emil Ries, of Chicago, reviewed fundamental points to be observed in the removal of any malignant growth; especially the importance of removing all malignant tissue in one mass if possible. Theoretically, one should know all of the metastases in a given case. Practically this is not possible. He advocates the radical operation as originally described by him, which is practically the Wertheim operation. He is now considering making the operation still more extensive. It is possible to get infection at operation from tearing through the cervix or from infected lymphatic vessels or glands, even though the technic may be otherwise excellent.

Heat in the Treatment of Inoperable Cancer of the Vagina and Uterus: Method and Results.—Dr. J. F. Percy, of Galesburg, Ill., advocates the use of the cautery in the treatment of inoperable cases of the uterus and thinks the method may even be extended to certain cases which are not inoperable. For the last six years he has opened the abdomen to control the amount of heat applied. The thermometer may be used in the bladder, rectum, the peritoneal cavity. He employs water cooled specula to protect parts not to be cauterized. In six years he has had thirteen cases which he treated by cauterization with the abdomen opened. These were all inoperable cases. The results were death in four, apparent good health in seven, and two of the patients are about to die.

Experimental Transplantation of Intestine after Resection of the Sigmoid, with Special Reference to Resection for Malignant Diseases of the Pelvis.—Dr. J. Shelton Horsley, of Richmond, Va., states that upon dogs two methods of transplantation of bowel were attempted: 1. By first severing the blood supply and wrapping omentum about the bowel. 2. By transplanting segments from the small intestine with its attached mesentery. By the first method the results were uniformly poor, but by the latter method and by special technic unique with himself, dogs have lived as long as sixty-three days, when they were killed by chloroform for the purpose of examination. This method, he believes, might be especially applicable in malignant conditions involving the bowel, thus preventing the necessity of forming an artificial anus.

THURSDAY, JUNE 19TH.

Election of Officers.—The following officers were elected for the ensuing year: Chairman, Dr. E. Gustav Zinke, of Cincinnati; vice-chairman, Dr. A. E. Benjamin, of Minneapolis; secretary, Dr. Brooke M. Anspach, of Philadelphia.

Report of Committee on the Question: "Should the Puerperal Uterus be Emptied of Ovular Remains in the Presence of Infection, and If So, When?"—Dr. Joseph B. De Lee, of Chicago, reports that the questions given below were sent to 400 professors and assistant professors of obstetrics and gynecology in medical schools, of classes A and B in the United States and Canada; 200 to assistant professors and professors of surgery; sixty to authorities abroad; and for the general profession, the questions were printed in the *Journal of the American Medical Association.*

Question I: A primapara with septic abortion, at three months, fever two days, the hemorrhage negligible, the ovum intact retained: What would you do? Of 189 obstetricians and gynecologists replying, 139 cleaned out the uterus, thirty-two used expectant treatment, and eighteen treated with mild antiseptics and waited. Of fifty-one surgeons, forty-two cleaned out uterus immediately; four did nothing, and five used antiseptics and expectant treatment. Of thirty-seven Europeans, thirty-two immediately cleaned out the uterus, while five used antiseptics and expectant treatment. Of fourteen general practitioners, eleven cleaned out the uterus and three used the antiseptic and expectant treatment. The majority of those who cleaned out the uterus thought the sharp curette was dangerous and used either the finger or a dull curette. A large number packed the uterus with gauze and treated expectantly.

Question II: A primapara, with septic abortion, at three months, fever two days, hemorrhage negligible, the fetus expelled, placenta retained: What would you do? The answers were in general the same as for question No. 1.

Question III: A primapara, fourth day after full term delivery, positive evidences of uterine injection, no hemorrhage, retention of ovular remnants suspected: What would you do? Of 183 obstetricians and gyneologists, 136 cleaned out the uterus immediately, thirty-four treated expectantly, and thirty-three used antiseptics and expectant treatment. Of fifty-two surgeons, thirty-six removed the remnants, four used expectant treatment, and twelve used antiseptics and expectant treatment. Of Europeans, twenty-seven used the first method, four the second, and seven used antiseptics. Of thirteen general practitioners, eight removed the remnants and five used antiseptics and expectant treatment.

Question IV: If you believe in active interference: (a) When do you do it? Of 154 obstetricians and gynecologists, 128 treated immediately, eight within twenty-four hours, and eighteen acted later; surgeons, forty-two at once and nine later; Europeans, twenty-four at once, seven within twenty-four hours, and more later.

(b) How do you do it? Of those who answered 113 used curette, seventy a dull curette, nineteen a sharp curette, twenty-four did not specify, 127 obstetricians and gynecologists used the finger with or without it being covered with gauze, thirty-nine used tampon.

Question V: What do you do when hemorrhage complicates sepsis? Treatment varied. Many used tampon, others used curette or finger to remove remains.

Question VI: If you believe in trusting to nature when ovular remnants are retained, how long do you wait before operating? Nobody would answer this question.

Question VII: Do you try to distinguish between sapremic and bacteriemic states before operating? About fifty per cent. thought they could determine.

Question VIII: Do you make any distinction between the treatment of sepsis after abortions and that after full term, or near full term delivery? Fifty-seven gynecologists and obstetricians made some difference, ninety did not, but fifty-three were more active in abortion. Of the Europeans, nine were more active in abortion, thirteen less active.

Doctor De Lee concludes by giving his own ideas in answering the questions. *Question I:* Try to learn if there is a perforating injury of the uterus which if present indicates an immediate laparotomy. If no perforation, the uterus may be packed with iodized gauze, and again on the following day. If uterus does not expel fetus, may use finger. *Question II:* Use same treatment. May very rarely use large half sharp curette. *Question III:* Do not invade the uterus. *Question IV:* Wait a few days to see if nature expels. Then may use iodized gauze if necessary. *Question V:* Tampon, and repeat once or twice if necessary. *Question VI:* Trust to nature for a few days. *Question VII:* Cannot absolutely determine. *Question VIII:* In septic abortion invade with finger or curette with dull curette. He says that he is becoming more and more conservative, and inclined to give nature a chance.

Biochemical Factors in the Causation of Uterine Hemorrhage.—Dr. J. Riddle Goffe, of New York, says that experiments conducted under his direction show that the systemic blood does not change during menstruation. It is the menstrual blood that has changed and lost its powers of coagulation; probably it is affected in some way by the endometrium. This blood will inhibit the coagulation of normal blood. He concludes that there is an antiferment in the menstrual blood. There are some uterine hemorrhages which cannot be explained on anatomical grounds. These may be explained on the biochemical basis as designated above.

Treatment of Hemorrhage from Nonpregnant Uterus.—Dr. John B. Deaver, of Philadelphia, treats the subject in a general way, giving etiology, symptoms, and treatment of the various types. He emphasizes the point that any

underlying cause must be discovered and does not favor the routine use of the curette. In a few obscure cases, and after exhaustive examination has been made to find the cause, a hysterotomy is advised if it can be undertaken by an experienced surgeon.

Intraabdominal Adhesions.—Dr. R. C. COFFEY, of Portland, Ore., has made an exhaustive study of the formation of abdomenal adhesions in experiments upon hogs and dogs and clinical observation in operative cases. He believes there is an inverse ratio between the danger of sepsis and the tendency to formation of adhesions. In those cases operated upon repeatedly for abdominal adhesions it is rare to find general sepsis. Ordinary care in technic should always be practised, such as asepsis, careful handling of viscera and adequate protection. Several general rules of treatment are emphasized, each to be applied to suit the case: 1. May cover all denuded areas with peritoneum when possible. 2. May roll denuded intestine in its mesentery. 3. May split the mesentery of the gut and use the flaps, which is very difficult. 4. May use omentum, especially in the region of the gall bladder. 5. In some cases may fold peritoneum. 6. May suture sigmoid over denuded areas in pelvis. 7. May hold an organ away from location of denuded area—applied in treatment for Lane's kink; or in ptosis of the stomach with adhesions holding it down and thus producing severe symptoms, it may be sutured to the abdominal wall and the lesser omentum shortened. 8. In cases of diffuse adhesions of the bowel lateral anastomosis may be made without severing the adhesions. 9. In recurrent increasing adhesions where patient has had one or several previous operations, several wicks of gauze protected with rubber tissue should be used to keep bowels away from denuded area. He emphasizes the point that as large an amount of gauze should pass through the abdominal wound as there is in the abdomen. This drainage is not to be removed for at least a week. He explains the good results of this treatment by (a) complete drainage of the serum abundant in these cases, (b) a double line of granulation tissue which prevents adhesions.

Care of the Umbilical Stump: A Bacteriological Study.—Dr. FRED L. ADAIR, of Minneapolis, states that the basis of this paper is a bacteriologic study of material removed from the umbilical cord and surrounding skin immediately after birth. Sixty-five cases were studied with unsatisfactory cultures in three, no growth on agar plates in seventeen, nonpathogenic organisms in thirty-three and pathogens in twelve (staphylococci in eight and coli group in four). This is supplemented with a study of the clinical courses of 244 cases. Fifty-eight were treated by close ligation and the use of alcohol. One hundred and eighty-six were treated with tincture of iodine (one half strength) in addition. About twenty-four per cent. of the former had fever of 100° F. or over thirteen per cent. were jaundiced, of which four hed fever. The average loss of weight was 246 grammes. There was slight local evidence of infection of the navel in five cases, none of which had fever. The cord came off in five and one half days on an average. In the latter series 22.58 per cent. had fever and eight per cent. were jaundiced, five of which had fever. The average maximum weight loss was 228 grammes. There was slight local evidence of infection in ten, of which three had fever. The cord came off in seven and a quarter days on an average. The conclusions are as follows: 1. The cord is contaminated with pathogenic or nonpathogenic organisms at or immediately after birth in a large percentage of cases. 2. It is possible to quite effectively combat serious umbilical infections by comparatively simple methods; as shown by this report of over 200 cases with no mortality from this cause. 3. There seems to be little choice between the two methods used in these cases. 4. That jaundice in the newborn is quite frequently associated with fever. It would not be illogical to suspect that this might originate by some agent introduced through the umbilical vein or lymphatics. 5. Febrile reactions are common in the newborn and are associated with other disturbances, such as a high primary weight loss and jaundice. They are due no doubt to many causes, but we as obstetricians should see that those due to infections entering at the umbilicus are reduced to a very small minimum.

The Serodiagnosis of Pregnancy and Its Place in Practical Obstetrics.—Dr. HENRY SCHWARZ, of St. Louis, has used the dialysization method of Abderhalden and finds the anhydrin more reliable than the biuret reaction. The optical method is technically more difficult and he has not tried it as yet, though it is more accurate. In twenty-one cases known to be pregnant it was positive. In four puerperal patients it was positive. These observations extended from twelve days after the first period which was missed to fourteen days post partum. It was correct in eight cases where it was the only means of making a differential diagnosis. While it is an important means of diagnosis, there are sources of error of which we do not at present know. There are much greater possibilities in opening up new methods of study of the various toxemias of pregnancy. This means of study may give us ultimately valuable means of treating these conditions.

Dr. LOSEE, of New York, reported observations at the New York Lying In Hospital on 563 cases, 193 of which were nonpregnant, and 370 pregnant. There was faulty technic in some of these; so he reports only the last 150 cases. Of these, ninety-seven were pregnant, and 91.4 per cent. gave positive reaction; there were fifty-three nonpregnant, of which ninety-five per cent. gave negative reactions. It is important to control with nonpregnant women. There were four carcinoma cases with negative results.

Doctor HEANEY, of Chicago, reports thirty cases with uncertain results. He doubts the specificity of the reaction.

Doctor ECHOLS, of Milwaukee, reports satisfactory results in a few cases.

The Essentials of Sanatorium Treatment of Tuberculous Gravidæ and Puerperæ and Their Children.—Dr. CHARLES S. BACON, of Chicago, says that each year there are 32,000 women with tuberculosis pregnant in the United States. One fourth of all women dying of tuberculosis in the child bearing period are gravidæ. One third of tuberculous gravidæ die within one year after labor. Three fourths of children under five years old who die of tuberculosis are born of tuberculous mothers. Special provision should be made for sanatorium treatment of tuberculous women who are pregnant. There are about 10,000 such women who need treatment each year in the United States. Such women should remain in sanatoriums and be more or less isolated from their children for about three months. Mother's milk should be used as far as possible in feeding the infants.

The Value of Abdominal Measurements in Pregnancy: A Statistical Study.—Dr. ALFRED B. SPALDING, of San Francisco, has studied the height of the fundus uteri, and tried to find some method of determining the period of gestation. In 167 of 300 cases the labor began when the height of the fundus was between thirty-four and thirty-seven centimetres above the pubes. In these cases the weight of the infants was from 3,275 to 3,395 grammes. In 411 cases measurements were taken at different weeks of gestation. From these measurements he deduces the following rules: In the seventh month two added to the height of the fundus in centimetres gives the week of gestation. In the eighth month add three, four in the ninth, and five in the tenth. He thinks this is of value in estimating the period of gestation in three quarters of the cases. It may also be of value in determining the size of the child.

Local and Spinal Anesthesia in Gynecology and Obstetrics.—Dr. GEORGE GELLHORN, of St. Louis, states that cervical operations, such as amputation, dilatation, and curretage of the uterus, may be successfully undertaken with novocaine used for local anesthesia, either by infiltration or nerve blocking. He repairs vesicovaginal fistulæ by injecting a weak novocaine solution into the bladder. Spinal anesthesia with novocaine has its definite place in selected cases, especially those where general anesthesia is contraindicated, but definite details of technic must be followed. Especially is spinal anesthesia applicable to gynecological operations. The writer reports sixty-three cases in patients whose ages varied from seventeen to sixty-four years. In one the anesthesia was not complete, six patients required a few whiffs of ether, one patient showed collapse. Vomiting was a frequent occurrence. No deaths occurred.

Spinal Anesthesia in Gynecology, Obstetrics, and Abdominal Surgery.—Dr. W. WAYNE BABCOCK, of Philadelphia, has investigated the specific gravity of the spinal fluid in 100 cases and found it to be constant within

one point at 1,065. The direction of the flow of the fluid injected into the spinal canal may be controlled by the position of the patient and the specific gravity of the fluid. The rate of diffusion is very slow. Spinal anesthesia is virtually a nerve root anesthesia and makes the most efficient nerve block. The conducting paths of the cord are not impaired. Spinal anesthesia affects the vasomotor system. It is dangerous in persons with low tension. It is correspondingly safer in those with overtension. He has used this method in 3,759 operations on 3,000 patients. He reports two deaths in cases of operation in the upper abdomen. He considers the method more dangerous in these operations, but thinks it is well adapted to surgery of the urinary tract, as the urinary findings were usually negative following these operations. Dr. Babcock considers ether a safer anesthetic for general use. Spinal anesthesia should be especially avoided in cases of myocarditis and low tension.

The Thyroid Gland and Its Degeneration in Relation to Obstetrics and Gynecology.—Dr. CHANNING W. BARRETT, of Chicago, believes there are other etiological factors than sex relations in the development of goitre. These may operate in combination or independently. There is a close relationship between the physiology and the pathology of the genitalia and the thyroid, especially in the female. Pregnancy is often associated with and aggravates disease of the thyroid, which in turn may be a serious complication of pregnancy and labor. It may enlarge after each pregnancy. Fortunately, advanced cases of hyperthyroidium do not often become pregnant. He advises that the developing girl should receive more attention and be treated by appropriate measures.

SECTION IN PATHOLOGY AND PHYSIOLOGY.

TUESDAY, JUNE 17TH.

Relation of Internal Medicine to Pathological Physiology.—Dr. A. W. HEWLETT remarks that direct causative therapy is employed in only a few diseases. Treatment is, however, usually directed to disturbed function. Study of pathological physiology in the clinic is difficult because condition cannot be created, and complicating factors cannot be eliminated. Animal experimentation is much more certain. The burden of the work in pathological physiology must be upon the clinician. Specialists in laboratory sciences should assist in every possible way. Limitation of private practice is desirable. Well trained assistants are necessary.

SYMPOSIUM ON DIPLOCOCCUS AND STREPTOCOCCUS INFECTIONS.

Epidemics of Streptococcus Sore Throat.—Dr. J. A. CAPPS discusses the three epidemics in Boston, Baltimore, and Chicago. Most striking difference from ordinary sore throat is the occurrence, in fatal cases, of a peritonitis without evidence of rupture from any viscus. There is frequent complications, as pleurisy, endocarditis, etc. Relation to milk supply is certain in each epidemic. Proportion of contact cases is small. In the Chicago epidemic streptococci were found in the milk, and a streptococcic mastitis was found in the cows. There was also considerable sore throat among the employees and milkers. Doctor Davis has shown experimentally that streptococcic mastitis may be produced in cows from streptococci on the milker's hands. A caked udder is not a necessary accompaniment of this condition, therefore mastitis may have been overlooked in the Boston and Baltimore epidemics. An ultimate origin of the infection from streptococcic mastitis of human origin gives the best explanation of the observed facts. Whether specific bovine mastitis may become virulent for man is unknown.

The Relation of Streptococci to Arthritis.—Dr. D. J. DAVIS observes that varieties of arthritis may be distinguished by their etiology when this is known, as gonococcic, traumatic, etc. Septic sore throat is often followed by arthritis. *Streptococcus rheumaticus, Streptococcus mucosus,* and hemolytic streptococci frequently attack the joints; *Streptococcus viridans* rarely does. He gives a report of forty-two cases of arthritis in which the tonsils were removed. In thirty-eight cases streptococci were obtained in practically pure culture from the deeper tissues of the tonsils; surface cultures are contaminated. Blood cultures are negative in the majority of cases. Fluid from the joints often is sterile. After removal of the tonsils there is always marked improvement, often a complete cure. Autovaccines often seem to hasten cure; sometimes act as a specific. They never do any harm. A hemolytic streptococcus was found in nearly all cases. Injection intravenously in rabbits (about 200 animals) invariably produces multiple arthritis. Symptoms usually appear a few days after inoculation and continue from one to three weeks. The proliferative changes may lead to marked deformity and cripple the animal badly. In ten per cent. of the animals an endocarditis developed.

Articular and Muscular Rheumatism.—Dr. E. C. ROSENOW states that there is a general agreement that rheumatism is an infectious disease, but there is a difference of opinion as to the exact etiological factor. Negative results have usually been obtained from blood cultures and cultures from the joint fluid. By inoculating in agar (thus producing a partial anaerobic condition) Rosenow obtained streptococci from the joint fluid in thirteen out of fifteen cases of acute articular rheumatism, and from the blood in four out of six cultures. Organisms isolated from man in the acute stage reproduced a similar disease in animals. The name *Strepococcus rheumaticus* is suggested by Rosenow for the organism producing acute articular rheumatism.

Classification of Pneumococci by Immunity Reactions.—Dr. A. R. DOCHEZ and Dr. L. P. GILLESPIE say that their object of research was to obtain a specific therapy for lobar pneumonia. White mice were employed. The protective serum and the culture were mixed and injected intraperitoneally. From sixty-two cases of human lobar pneumonia four groups of organisms were recognized by the protective test. Agglutinative tests are of some assistance. The groups are highly specific. They do not give cross reactions. A specific therapy seems possible.

WEDNESDAY, JUNE 18TH.

Physiology of the Stomach in Man and in Dogs.—Dr. A. J. CARLSON reports experiments on a man fed through a gastric fistula. The esophagus was completely closed as the result of a burn sixteen years before. Records were made by introducing a delicate balloon into the stomach and connecting it with a manometer. Patient feels moderate hunger at the beginning of a contraction and strong hunger at the apex of the contraction. Strong hunger is felt during a tetanic contraction. No hunger sensations are felt when the stomach is quiescent. An irritation causing a contraction of the stomach produces a hunger sensation. With some possible exceptions, the sight or smell of food does not influence stomach movements in man. Inhibition of movements is produced by tasting and chewing of food, by acidity, by tea, coffee, beer, wine, etc. In the dog any excitation produces inhibition. After section of sphlanchnics and vagi inhibition is lessened but still persists. Movements of the empty stomach also persist after section of all the nerves.

Movements of Empty Stomach in Dogs during Pancreatic Diabetes.—Dr. A. B. LUCKHARDT (reported by Dr. CARLSON). Contractions of the stomach occurred throughout the course of the disease, even when the animal was greatly emaciated.

Fat Absorption by the Mammalian Stomach.—Dr. C. W. GREENE and Dr. W. F. SKAER state that some fat is present in the epithelium of the normal stomach. There is a great increase in the fat content of the epithelium after feeding with olive oil. Normal condition is again reached about twenty-four to thirty hours after feeding. The droplets of fat are much larger in young than in adult salmon. Fat absorption from the stomach was found also in fishes, frogs, and snakes.

Physiology of Stomach and Duodenum Observed Radiographically.—Dr. L. G. COLE made observations on the human stomach. The first part of the duodenum acts with the stomach. The author calls this segment the pilleus ventriculi, or "cap." The function of the cap is that of a reservoir to receive the chyme at the end of the gastric systole. There is no periodic opening and closing of the pylorus. Some of the gastric contents escape into the cap at each systole. The pylorus is narrow at first but remains fairly widely open in the later stages of digestion. There is no propulsive peristalsis in the duodenum as in the stomach. Numerous radiographs were shown illustrating the movements of the stomach and the appearances of the pilleus ventriculi, or cap. What the author means by systole and diastole was not entirely clear.

Physiological Properties of Diaphragm Muscle.—Dr. F. S. LEE and Dr. A. E. GUENTHER remark that the

diaphragm muscle of cat is more nearly related to red than to pale muscle. Pale muscle shows a rapid contraction and a slower relaxation; red muscle shows a shorter contraction curve and a much slower relaxation. Red muscle survives much longer than pale muscle and is capable of doing much more work.

Functional Renal Tests.—Dr. J. H. Agnew gives a comparison of the results of phenolsulphonephthalein elimination and the retention of nitrogenous substances in the blood. The hypobromite method gives a fair index of the urea content of the blood.

Clinical Study of Hypercholesteremia.—Dr. H. B. Schmidt says that the amount of cholesterin in the blood of normal individuals is constant. It is, however, affected by the amount taken in the food; it falls on a protein diet. There is a definite increase in the blood in diabetes, which is of clinical interest in that xanthoma may occur in this disease. These tumors contain large amounts of cholesterin. There is also an increase in the blood in jaundice, chronic interstitial nephritis, and arterio sclerosis. No reason is known for this increase of cholesterin.

Functional Activity and Depression in Nerve Cells.—Dr. D. H. Dolley says that blood from fatigued animal, sarcolactic acid, and monopotassium phosphate do not produce the anatomical changes peculiar to functional activity. By prolonged administration, however, waste products produce the anatomical changes of functional depression. The chromatin is the source of energy in the nerve cell. The fatigue of excitation leads to exhaustion of the chromatin, this substance being used up faster than it is formed. Depression inhibits the formation of chromatin. The irritability of the cell is lowered in either case. The highly specialized cells of the cortex are exhausted in a few hours. Days or even weeks are required to exhaust the nerve cells of a crayfish. Nerve cells may be completely exhausted. Waste product fatigue is secondary to organic fatigue. Old age represents a final fatigue.

Isolation of Bacillus Fusiformis from the Blood.—Dr. W. P. Larson gives an extensive review of the literature. Report of case: Duration of illness, seven weeks. Symptoms, septic temperature, night sweats, pyorrhea alveolaris, etc. Extensive necrosis of superior maxillary bone was present. Smears from the necrotic area gave large numbers of spirilla and fusiform bacilli. Blood culture two days before death gave a pure culture of the organism. This is the first time that *Bacillus fusiformis* has been obtained from a blood culture. A pure growth was obtained by anaerobic incubation in acetic agar. Spirilla develop from the fusiform bacilli on culture media. Autopsy revealed extensive necrosis of the superior maxillary bone, marked enlargement of the spleen, etc.

THURSDAY, JUNE 19TH.

Experimental Nephritis Produced by Tartrates.—Dr. F. P. Underhill, Dr. S. Goldsmith, and Dr. H. G. Wells, administered sodium tartrate to the rabbit or dog which produces extensive and complete necrosis of the epithelium of the convoluted tubules and sometimes also of Henle's loops. The amount of urine excreted is greatly reduced and nitrogen elimination is markedly diminished or completely checked. The tartrate poisoned kidney is impermeable to urea injected in the vein of the ear, but sodium chloride is eliminated readily. The glomeruli must be concerned with the excretion of sodium chloride. This affords an excellent opportunity to study the function of different parts of the renal tubule. No other known substance has such a specific action on the convoluted tubules. Rochelle salts administered to man in doses considerably above therapeutic limits produce no albuminuria or other signs of nephritis. An animal with an alkaline urine may die of nephritis.

Pathology and Clinical Symptoms of Simple and Exophthalmic Goitre.—Dr. L. B. Wilson reports 1,200 cases of exophthalmic goitre and 2,400 cases of simple goitre. Clinically, we may distinguish acute and chronic types of goitre. The former have an average duration of nine months before coming to the clinic; the latter, fourteen years. Of exophthalmic goitres seventy-nine per cent. show hypertrophy and hyperplasia; eleven per cent. are of a regenerative type (new acini); ten per cent. are adenomas; 0.3 per cent. are of a diffuse colloid type. Clinically, we may distinguish toxic exophthalmic and toxic nonexophthalmic types. The former show hypertrophy and hyperplasia. The clinical symptoms are always coordinate with the degree of hypertrophy and hyperplasia.

Iodine Content of Human Thyroid.—Dr. E. V. Smith analyzed 200 thyroids by Hunter's method. The average iodine content to the gramme of dried substance for the normal thyroid is 2.5 mg.; for colloid goitre, 1.5 mg.; for hyperplastic glands, 0.5 mg. to 1 mg. Glands showing marked hypertrophy and hyperplasia average 0.54 mg. Ligature of the bloodvessels of a hyperplastic thyroid apparently produces a slight decrease of the iodine content. Younger glands contain more iodine to the gramme of dried substance than older ones; larger glands less than smaller ones. As a rule, the denser the colloid the greater the iodine content. Pure fetal adenomas have a very low iodine content. Iodine poisoning produces symptoms resembling hyperthyroidism. Administration of iodides for hyperthyroidism is contraindicated.

Effects on Blood Pressure of Goitre Extracts, Goitre Serums, and Other Substances.—Dr. A. H. Sanford says that extracts of most tissues depress blood pressure and a tolerance may be established to subsequent injections. No tolerance to brain tissue extracts develops. Choline is probably the depressor substance. Extracts of hyperplastic thyroid (exophthalmic goitre) cause a marked fall of blood pressure, followed by tolerance. Extract of a sarcoma of the testis gives a similar reaction. Extracts of other tissues give less marked depression. The hyperplastic thyroid contains a powerful depressor substance.

Cloudy Swelling.—Dr. E. T. Bell states that the gross features of cloudy swelling may be present in the absence of the classical microscopic picture and vice versa. Edema and fatty metamorphosis play an important part in the production of the gross picture. The microscopic appearances are best judged in fresh unstained preparations without the addition of any fluid. Fixation or even freezing often causes the disappearance of the granules. Neither the Altmann granules nor those shown by intra vitam staining are identical to any considerable extent with those of cloudy swelling. Cloudy swelling in the kidney of the rabbit consists in an increase of the dark tubules—some dark tubules are present normally. The albuminous granules in the kidney cells of the rabbit are much larger than those in the human kidney. The term cloudy swelling should be employed only in gross description. A qualifying phrase may be added to designate the accompanying microscopic appearances.

Local Lesions from Salvarsan and Neosalvarsan.—Dr. H. E. Robertson experimented with intramuscular infections in dogs. After two hours there was found local hemorrhage, edema, and pigment from the drug. After two and three days there is extensive necrosis of muscle fibres and infiltration of polymorphonuclear leucocytes. The leucocytic infiltration is sometimes so great that the lesion is almost an abscess. Tissue proliferation begins in about one week. There is no essential difference in the lesions produced by salvarsan and neosalvarsan. The bichloride, succinimide, salicylate, and cyanide of mercury produce lesions resembling those of salvarsan. The lesions in two human cases resembled those produced in dogs.

Experimental Cirrhosis of Liver.—Dr. A. L. Grover gives a review of the methods of producing cirrhosis. All methods consist in producing repeated injuries to the liver cells. Author produced cirrhosis in rabbits by chloroform anesthesia forty minutes a day on three days, followed by intravenous injection of *Bacillus coli*. Cirrhosis was produced in one rabbit by administration of fifteen c. c. of forty per cent. alcohol daily for five months.

Relation of Acapnia to Shock.—Dr. H. H. Janeway says that shock may be produced by artifical respiration (sixty to sixty-five to the minute). The shock in these experiments is due to increased intrabronchial pressure and varies with the amount and time of application of this pressure. Rise of intrabronchial pressure causes a fall of blood pressure, probably because it delays the circulation of the blood. Shock is not due to decrease of carbon dioxide in the blood, since it occurs when provision is made against the loss of this substance. A dog in which extreme shock has been produced may be rapidly and completely resuscitated by the immediate transfusion of blood from a normal dog, therefore shock is not due to exhaustion of the nerve cells. If the blocking off of the nerves is of value in a surgical operation it is not because it prevents the exhaustion of the nerve cells.

(*To be continued.*)

Pith of Progressive Literature.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT

May 6, 1913.

Influence of Digitalis on the Recovery of the Heart after Physical Work.—E. Bernouilli states that as the result of experiments during rest there is more or less slowing of the pulse, while at the same time it grows fuller, but there is no change in the form or rhythm. Fraenkel, who experimented with strophanthus on a large number of healthy subjects, found that this slowing of the pulse occurred almost regularly while the blood pressure remained unchanged. The recovering pulse curves show no very noticeable differences between the digitalis and the normal curve, after physical work. Digitalis is not a heart tonic in the ordinary sense of the word. A stronger action is not to be expected for healthy hearts, nor for failing hearts with good compensation. It is also not a prophylactic in those patients where post-operative pneumonia is to be feared, since the heart can immediately be brought under control with intravenous injections of digitalis at the first occurrence of heart disturbance. On the other hand, digitalis preparations are indicated in most of those hearts where we find beginning incompetence; but even in these we only await the opportunity for favorable action when absolute rest in bed is prescribed. Also, an incompetent heart will not become more resistant under digitalis. The heart cannot recover itself as long as the same work which caused loss of compensation is put upon it. The same is proved by the not infrequent observations in which, at first, digitalis proved to be completely ineffectual, whereas its good results are demonstrated by the second or third attempt after the heart has had rest, so that it can recover itself.

Severe Melena Neonatorum Cured by Defibrinated Human Blood.—A. Merckens questions how a newly born child suffering from melena apparently lost the normal fluidity of its blood from a scarcity of thrombin. This resulted in continuous bleedings of mucous membranes, especially those of the rectum. By the addition of healthy defibrinated human blood the organism received blood fluidity ferments, which either directly brought about fluidity of the blood or indirectly aided the formation of thrombin. The blood findings are interesting as regards the hemoglobin content and the count of the red blood corpuscles, which are just the reverse of the observations of Bennecke. While the latter formed a diminution of the hemogloblin content and the red blood corpuscles in immediate connection with the transfusion of defibrinated human blood in pernicious anemia, the author proved an increase in these, as is shown by the following figures: November 23, injection. November 25, hemoglobin, forty-six per cent.; red blood corpuscles, 1,150,000. November 29, hemoglobin fifty per cent.; red blood corpuscles, 2,390,000. December 21, hemoglobin, sixty per cent.; red blood corpuscles, 3,200,000. The white cells showed a marked oversupply of lymphocytes, especially marked in the last count, which exceeds the normal limit from fifteen to twenty per cent., and a corresponding decrease of neutrophile nucleated leucocytes. This result of injection of defibrinated human blood permits of the method being used for patients with a tendency to fatal hemorrhage, especially in melena, in which, perhaps, for the first time best results have here been obtained.

Direct Treatment of Tuberculous Peritonitis with Iodine Preparations.—A. Falkner gives a report of three patients, two with moist and one with dry peritonitis of tuberculous character, which shows results analogous to Hofmann's; a shorter time for cure and no injurious effects. Tincture of iodine was used in the moist peritonitis and iodovasogen in the dry aided also with iodipin enemata. In spite of the adverse opinion of Roving, the tincture of iodine is, according to Bier, positively accepted as curative in tuberculous tissues.

May 13, 1913.

Experimental Radiological Studies in the Physiology and Pathology of the Digestive Tract.—R. Lenk and F. Eisler state the results of their experiments carried out on a large number of healthy individuals who were free from gastric disturbances. Bismuth in solution was used as a meal to make possible the even distribution of the agent. As a result of their first series of experiments it was concluded that gastric disorders may be ascribed to the chemical processes in the stomach itself, especially the disorder of overacidity, and not to the motor disturbance. By future experiments they hope to prove which of these relations is the more important.

Contribution to the Chemotherapy of Tuberculosis: Experiments with Borcholin (Enzytol).—H. Mehler and L. Ascher state that their observations are analgous to those of Werner Szecsi. They were never able to cure animals with the colloids alone, but this was effected with the cholin salts alone, without the addition of colloids. These favorable results with cholin salts were, however, considerably hastened by the addition of colloids. Moreover, the histological changes were the same in those animals treated with cholin alone as in those treated with cholin colloid mixture. The method remained the same, but the addition of colloids simply hastened the time of the reaction. The healing of tuberculous lesions in patients seems to have been hastened more by combining borcholin with copper; of course, sometimes with marked reactions.

May 20, 1913.

Local Therapeutic Experiments with Thorium Chloride in Carcinoma and Sarcoma in Animals.—A. Caan reports considerable success in the treatment of sarcoma rats and cancerous mice by the local injection of thorium chlorides. The remedy will next be employed intravenously, and should similar results be secured he believes that an advance of far reaching importance will have been made in the therapeutics of malignant tumors.

The Biological Diagnosis of Pregnancy.—B. Strange states that his experience with Abderhalden's dialysis method of demonstrating the existence of pregnancy biologically will, at least, permit of a brief report of his findings, although he has not

yet conclusively proved its value. At first he examined the serum of only positively pregnant women, and in seventy-three of these a positive reaction was obtained in every instance, or 100 per cent. Of those positively nonpregnant only five were at the author's disposal, so that he does not yet feel justified to express a final opinion concerning the test. In these few cases, however, where he could exclude all errors, Abderhalden's reaction was always negative.

Salvarsan Treatment of Anthrax.—Mokrzecki relates the treatment of a patient severely infected with anthrax. The man had a large swelling about the size of the fist on the right side of the throat and on it was a spot with a dark crust, surrounded by many pustules. There was also enlargement of the neighboring lymphatic glands. The pus was found to contain anthrax bacilli; morning temperature 100.8° F. The abscess was opened by means of the actual cautery, for which the characteristic tolerance of patients affected with anthrax was shown. An intravenous infusion of salvarsan was then given. After three hours the temperature had risen to 103.6° F., and at the end of eight hours it had dropped to 100.4° F. On the following morning the temperature was 97° F. and the patient's general condition was much improved. The swelling was greatly diminished. After six days the infiltration of the glands and skin had disappeared and on the tenth day the crust fell off. The patient felt well after the second day; temperature not higher than 98.7° F. No anthrax bacilli were found in blood withdrawn by hypodermic needle. The author concludes that salvarsan was the principal factor bringing about the cure and that it is to be preferred to the usual method of sterilization by injections of carbolic acid around the carbuncle.

May 27, 1913.

Lymphacytosis of Asthenics and Neurasthenics and Its Clinical Value.—R. Hoesslin states that the lymphacytosis of patients affected with Basedow's disease is positively not a constitutional ailment, because aside from this disease such patients always have additional peculiarities. The blood of many who were formerly treated for seeming heart neurosis at first appeared normal, and a pronounced lymphacytosis with neutrophilic leucemia did not appear until the Basedow symptoms were manifest. The author states that of a group of seventy-four patients, among whom the exceptionally ill are without anatomical findings of importance, forty-four were found having leucopenia. One half of this group consisted of marked asthenics. They only felt well temporarily after long residence at the seashore, mountain, or summer resorts, and when again taking up the ordinary duties of life they soon became ill. One of the leading characteristics of this group was pallor (not due to anemia, chlorosis, or lack of hemoglobin or red blood corpuscles), and lymphacytosis was frequently found. There were also found ptoses of the stomach, kidney, and colon, combined with stenocardia of long standing. Prolonged absence of menstruation was noted, as was also a slight elevation of temperature.

LYON MÉDICAL.

May 18, 1913.

Primary Cutaneous Sarcomatosis Following a Punctured Wound.—M. Favre and P. Savy report the case of a cemetery guardian aged fifty-five years, who, while cleaning a vault, received a wound in the right popliteal space from a pointed piece of iron work. Three weeks later there appeared at the exact seat of the puncture a small red pimple, which grew rapidly larger, was cauterized without success and was soon followed by the appearance of other nodules on the forehead, in the right axilla, and after about eight months, over the entire body. An unusual feature of the affection was the degeneration of the nodules into ulcers, which finally became confluent over wide areas. A few days before death the nodules suddenly subsided and the ulcers lost their purplish limiting zone. No visceral lesions were found. Histologically, the tumors showed polymorphic, globose cells, including giant cells, and numerous karyokinetic figures.

Tuberculous Encephalitis.—L. Bériel reports a case illustrating clearly the fact that tuberculosis may sometimes involve very extensively the brain substance with but little disturbance of the meningeal coverings.

PRESSE MÉDICALE.

May 28, 1913.

Rational Treatment of Nasal Hydrorrhea.—Lermoyez looks upon nasal hydrorrhea as a manifestation, in most instances, of neuroarthritism. The pathogenetic triad of conditions accountable for the arthritic diathesis is always present, viz., excessively sedentary life, overeating, and excessive intellectual activity. Migraine, asthma, and hydrorrhea may be observed to alternate in succeeding generations of the same family, the nasal condition occurring chiefly in the female sex. Eliminating the exceptional cases of discharge of cerebrospinal fluid through the nose and of serous discharge from the antrum, nasal hydrorrhea is in general a vicarious eliminatory process, the renal function apparently being deficient in these patients. The rational treatment is therefore both to diminish toxic waste production and promote renal activity, and this the author accomplishes, with gratifying results, by ordering rest in bed and a milk diet. Local treatment should consist merely of hot air insufflations. Atropine and strychnine were formerly used with success by the author, but are now unnecessary. If these patients are sent to health resorts, the ones selected should be those suited for renal patients and not those for disease of the respiratory tract. Renal activity should be encouraged and kept under constant observation.

Suprapubic Cystotomy with the Bladder Empty.—F. Lastaria, in view of the fact that several deaths have followed distention of the bladder with air previous to cystotomy, the gas having been forced into the space of Retzius and entered venous channels, does away with distension altogether and operates on the empty organ. The bladder is first washed out through a Nelaton ca-

theter, then thoroughly emptied by suprapubic pressure. The patient is then placed in the Trendelenburg posture, sometimes with only slight inclination, and the incision made. The intestines tending to sag toward the diaphragm, a species of aspiration is produced in the pelvis which causes the peritoneum to recede from the muscular layer and tends therefore to prevent injury to it from the surgeon's knife. By making pressure at the line of reflection of the peritoneum or, if this is not visible, behind the upper border of the pubis, the umbilicovesical fascia, which continues downward in the line of the parietal peritoneum after the reflexion of the latter backward, is broken through, and the operator can then freely retract the peritoneum from the bladder, which is easily recognized both through its anatomical position and its two parallel veins near the midline. The bladder is then opened. The author has carried out this procedure in about forty cases, including three infants and two men aged seventy, without the least difficulty.

SEMAINE MÉDICALE.

May 28, 1913.

Intermittence in Stammering.—Chervin points out that stammering is subject to intermittences, i. e., frequently disappears, not only for a few hours, but sometimes for one or more days, or even several weeks. Generally there are successive periods of increase and diminution of stammering in the same day. These variations are emotional in origin. Knowledge of this fact is of paramount importance in the treatment, which must include a process of training of the patient so that he may resist and conquer the tendency to emotional perturbation under even slight stress.

NOUVELLE ICONOGRAPHIE DE LA SALPÊTRIÈRE.

November-December, 1912.

Three Cases of Tumor of the Cerebellopontine Angle.—Moniz contributes a thorough and detailed clinical study of three cases of cerebellar tumor, one of which is also accompanied by a necropsy report. In none of the cases was an operation performed. In the summary of the symptoms present it may be noted that headache and somnolence occurred in each case, vomiting in two, and choked disk in only one. Lumbar puncture revealed overtension in one case, but lymphocytosis was absent from all cerebrospinal fluids. All of the patients were affected with vertigo, tending to fall to the side of the lesion (right sided in each case). Electrical vertigo (Babinski) was uniformly positive (vertigo appearing with less current with anode in ear on side of lesion than with cathode). Deafness was complete on side of lesion in two cases, incomplete in one. Diminished sensation in the distribution of the trigeminus, abolition of the corneal reflex (Oppenheim), and disturbances of the facial were localized on the side of the lesion in each case. As to symptoms distinctly cerebellar, may be mentioned dysmetria, adiadokokinesis, and cerebellar catalepsy, which were present in all. Neither asynergia or scanning speech was observed.

Acromegaly and Uremia.—E. Pallasse and J. Murard report a case of acromegaly which came under observation while the patient was comatose from uremia. Treatment, including renal decapsulation, was unavailing, and at necropsy a tumor of the hypophysis was found. On the basis of this observation, as well as references in literature in which the association of these two conditions has been noted, the authors speculate as to the possibility of a casual relationship between them.

Contribution to the Study of Obesity in Paresis.—A. Obregia, C. Parhon, and C. Urechia, having noted the special disturbances in paresis, as well as other mental diseases, the authors have studied four obese paretics (one with necropsy) with the aim of discovering some cause for the obesity. Their attention was particularly directed to the condition of the glands of internal secretion in the case examined post mortem, and are inclined to think that either overfunction or underfunction may conduce to formation of an excess of adipose tissue.

A Case of Adenolipomatosis.—M. Trénel and Fassou describe a case of adenolipomatosis affecting a man of fifty-eight years and alcoholic. The masses of new formation were very large and symmetrically distributed, invading the cervical region, anterior and posterior and the scapular, dorsal, and lumbar regions, as well as the epigastrium, groins, etc. The article is illustrated by excellent reproductions from photographs of the patient.

January-February, 1913.

The Nervous Form of a New Trypanosomiasis (Trypanosome Cruzi Inoculated with the Triatoma Magista) (Chagas's Disease).—Carlos Chagas, of Rio Janeiro, contributes a résumé of his observations in Brazil of the nervous manifestations of a recently discovered trypanosome. Aside from its predilection to invade other parts of the body, notably the thyroid gland, the organism frequently localizes itself in the central nervous system; so often is this the case that the author states that in localities where it is found it is the most frequent cause of organic affections of the central nervous system. In less than two years' work more than 2,000 cases of this infection have been observed, and of these about 200 involved the nervous system. The organism invades the nerve cell bodies, which are destroyed and surrounded by reactive infiltration. Clinically, the manifestations may be acute or chronic, the acute form characterized by symptoms of meningoencephalitis which is generally fatal. In the chronic form, which rarely may be a sequel of the acute, the involvement is usually diffuse and extensive, giving rise to conditions of diplegia, dementia, epilepsy, etc., as well as cerebellar and spinal cord types. In the chronic forms the mortality is low, and even old age may be attained.

Cervical Hypertrophic Meningitis.—J. Babiaski, J. Jumenté, and J. Jarkowski think that some of the common ideas regarding hypertrophies of the meninges in the cervical region should be revised, and to this end report in detail a case of this kind with necropsy findings. Clinically, the condition was progressive, evidencing incomplete compression of the cervical region of the spinal cord and the associated nerve roots. The Wassermann reaction was positive. Spastic paralysis and incontinence were prominent, but objective sensory changes were

slight. On post mortem examination the most striking lesion was the thickening of the meninges of syphilitic origin, evidently primary and most extensive in the arachnoid, but also including the pia and dura. The spinal cord implicated mainly by the pressure exerted upon it, but there were no long tract degenerations. The authors call particular attention to the fact that the hypertrophy was not limited to, or even predominant in, the dura, therefore not a "pachymeningitis." Hence their designation of the condition as hypertrophic cervical meningitis.

Contribution to the Study of the Localization of Aphasia.—LaSalle Archambault, from the observation of two cases which are described clinically and pathologically, arrives at the following conclusions: 1. That a lesion of the third left frontal convolution in a right handed individual does not necessarily cause motor aphasia; and, 2, that a lesion of the left lenticular region in one who is right handed may suffice to produce a marked and permanent motor aphasia.

A Complete Supernumerary Lumbar Vertebra in an Egyptian Mummy of the Eleventh Dynasty; Radiographic Findings.—M. Bertolotti, when examining a number of Egyptian mummies by the x ray, came across one of a child of about six or eight years, in which there were six complete lumbar vertebræ, besides the usual twelve dorsal members. The number in the cervical and sacral regions was impossible to determine. The description is accompanied by an excellent reproduction of the radiograph.

REVISTA DE MEDICINA Y CIRUGIA PRACTICAS.

April 7, 1913.

Tracheoscopy in Trachial Stenosis.—Botella reports two cases of stenosis due respectively to aneurysm of the aorta and adenopathy of the mediastinum. He made the diagnosis by tracheoscopy and this was afterward confirmed by radiography. The intrinsic stenoses, the author says, which are produced by lesions which directly lessen the lumen of the trachea, are those caused by tracheal tumors and in general by all those affections that can produce ulcerations which give rise to consecutive retractions and cicatricial bridles, lessening the lumen of the trachea. Syphilis, diphtheria, tuberculosis, ozena, and foreign bodies are the more frequent causes of the stenosis.

Temporary Deviation of Urine by the Via Hypogastrica.—We know, Perez Arias says, that the hypertrophy of the prostate is a disease almost exclusively of the senile age and, therefore, the patient who has such an affection possesses an exhausted organism, not only on account of his advanced age, but by the partial retention of the urine, which produces great discomfort and certain chronic intoxications caused by the decomposition of permanent residuum which remain after each micturition. Although the hypertrophy of the prostate is a chronic affection, this sometimes grows more severe by the voluntary and prolongated rentention of the urine, efforts in defecation, long rides on horseback, chilliness which may act directly or by means of the congested influence. In these cases the prostate becomes the seat of an inflammatory process, with its corresponding congestion. The first thing the physician who has to treat a case of retention of the urine thinks of is to empty the bladder immediately; this can be done by two methods, the extraction of the urine by natural means, catheterism, or deviation by the via hypogastrica. Catheterism, in all these cases of acute retention, is attended by great inconveniences. Any organ when ill needs rest, and this rest cannot be afforded to an inflamed prostate if we place it in direct contact with the foreign body; hence we have no reason to be astonished if we see that the patient gets worse after the insertion of the catheter. The author, therefore, advises the temporary deviation of the urine, and he also says that the via hypogastrica should be preferred. Nevertheless, there are many cases in which we must first try to apply the catheter. This must be done very carefully, and if any resistance is found we must resort to the suprapubic puncture of the bladder; then, after an appropriate interval, the catheterism is tried again, and if no results are obtained suprapubic cystotomy must be performed under local anesthesia with ethyl chloride.

BRITISH MEDICAL JOURNAL.

June 7, 1913.

Radium in the Treatment of Malignant Disease.—Robert Knox is very conservative in his conclusions with regard to the value of radium in the treatment of this form of malady. He believes that: 1. In all cases of early cancer the operative method is undoubtedly the best; it is quicker, safer, and it offers the best prospect of cure. 2. Radium is a useful adjunct in the treatment of all cases, as a prophylactic after operation, or, failing operation, as the best method of treatment. It must be stated that in selected cases x rays are quite as useful as radium. 3. Radium is useful as a remedy in patients who refuse operation, or in such as are not suitable for operation. 4. In inoperable cases radium may help to render the condition operable and, failing in this, it is a powerful palliative measure. Knox calls attention to the fact that in certain cases the action of radium may well be to increase the rapidity of the growth of the neoplasm, rather than to bring about its destruction. Such conditions must, however, be rare, but the possibility must be borne in mind.

A Case of Complete Auriculoventricular Heart Block.—T. Wardrop Griffith and A. Mills Kennedy report the case of a patient in whom there was complete and permanent block of the impulses from the auricle in their transmission toward the ventricle, so that the auricles were beating at a rate rather less than double that of the ventricles. The rhythm of the ventricles was regular, while that of the auricles was not altogether so. The authors suggested, in a previous report of the same case, that there was possibly also a condition of sinoauricular block. A post mortem examination of the patient's heart showed marked involvement of the region of the auriculoventricular bundle, together with the almost complete occlusion of its circulation. In the sinus region of the auricles there were marked fatty and infiltrative changes, and apparently there was some destruction of the

true nodal tissue in the sinoauricular node. This examination seems, therefore, to lend some support to the suggestion made during life to the effect that there was also a condition of sinoauricular block.

The Position and Form of the Normal Human Stomach.—A. Melville Paterson describes the normal organ as being composed of four distinct chambers: The cardia and fundus, connected by the pyloric vestibule with the pyloric antrum, and, beyond this, the pyloric canal. The constriction forming the pyloric vestibule may form a definite tubular canal, or it may be a deep V shaped notch in the greater curvature, producing often a typical hourglass contraction. The commonest variation is due to the repression of the pyloric antrum, so that the pyloric vestibule and the pyloric canal form one continuous tubular passage. The chief alterations in form of the stomach occur along the greater curvature and in the pyloric half. An hourglass contraction of the stomach is not necessarily pathological; it is, in fact, the form most often found in the dissecting room.

A Note on the Shape of the Normal Empty Stomach.—J. S. B. Stopford describes the condition as found in the course of an autopsy performed a few hours after death. The organ was tubular, except for one dilatation, which was roughly cone shaped and situated at the summit of the vertical cardiac portion. It obviously represented the fundus. The general shape of the organ as a whole was that of the letter J. The esophageal entrance is oblique, and there is a well marked incisura cardiaca between the esophagus and the fundus.

CHINA MEDICAL JOURNAL.

March, 1913.

The Use of Emetine Salts in the Treatment of Amebic Dysentery.—J. Preston Maxwell, following the suggestions of Rogers, of Calcutta, reports the successful use of emetine salts in the treatment of ten cases of amebic dysentery. The contentions of Rogers were proved by the writer, who states that the drug acts more surely on amebic dysentery than any heretofore used, and with a minimum of discomfort to the patient. Nausea was seldom produced by the equivalent of double the dose of ipecac, as formerly employed. The drug used was emetine hydrochloride. The powder (0.01 to 0.05 gramme) was dropped into the barrel of an all glass hypodermic syringe, dissolved in about 0.75 c. c. freshly boiled and cooled normal saline solution, and injected subcutaneously into the back of the forearm or upper arm; and the site of the injection gave no trouble. In every case the stool was examined before treatment, and the presence of amebæ ascertained. In every case but one the type present was *Ameba histolytica;* the exceptional case contained both the coli and histolytica types, the former predominating. The more active the amebæ, the better the drug acted. The patients were also given a powder of bismuth and soda with, in some cases, a little quinine; in one case where there was active ulceration of the bowel, enemata of quinine were also given. The microscope showed that the amebæ were rapidly killed by the treatment.

BOSTON MEDICAL AND SURGICAL JOURNAL

June 12, 1913.

The Diagnostic Evidence Obtained by X Rays from the Lateral Aspect of the Skull, with Especial Reference to the Base and Its Annexa.—Percy Brown presents thirty-nine plates that show some of the evidences which can be obtained from a lateral projection, and that it is erroneous to think that little can be learned from the lateral projection of the base of the skull. Acute and chronic inflammations of the anterior accessory sinuses of the nose are most easily recognized by x rays in the occipitofrontal projection, and lateral projections give little more information, except as to the depth of the frontal sinus, but when structural changes are present the lateral aspect of the skull base is valuable. In the posterior ethmoidal region certain morbid states, like empyema, can be recognized only from the lateral projection. He believes that the sphenoidal region can be examined properly only from all angles, and that its clinical relation of the sphenoid to the pituitary region can be interpreted only from the lateral projection.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

June 14, 1913.

The Cutaneous Reaction in Syphilis.—Julian M. Wolfsohn makes a second report on this question and concludes that the results of his observations and also those of all previous workers with the luetin test, demonstrate the specificity of the luetin reaction for syphilis when properly performed. Intensive antisyphilitic treatment in the later stages of syphilis may cause a negative luetin reaction which, after an interruption of treatment, may become positive. Positive luetin reactions are usually obtained in treated case of congenital and secondary syphilis. In parasyphilis and in tertiary and latent syphilis the luetin reaction is especially valuable. Finally, in any case of suspected syphilis, whether previousy treated or not, a negative luetin reaction must be watched for at least four weeks so as not to miss a delayed reaction.

Gastric Dilatation; Its Treatment by Removal of Gastric Contents, Starvation, and Rest in Bed.—Anders Frick holds that a dilated stomach retains its contractility wonderfully well, no matter for how long a time or to what degree it has been dilated. He emphasizes the point that the chief purpose of the treatment of a gastric dilatation should be to give the dilated stomach every possible opportunity to contract, and this is best accomplished by the removal of the gastric contents, starvation, and rest in bed. These three measures should be viewed as a distinct method of treating gastric dilatation, indicated as soon as the diagnosis has been made, just as the starvation cure is considered a method of treating gastric ulcer. This method is indicated as a prepartory treatment in those cases of gastric dilatation in which a gastroenterostomy is to be made for the cause which has led to dilatation, as thereby the stomach will contract as far as possible and an eventual continuous gastric secretion will cease. As auxilliary remedies, intragastric or extragastric electricity, massage, cold compresses, or other hydrotherapeutic meas-

ures, abdominal supporters, rectal feeding, strychnine, antiseptic drugs and alkalies are valuable, but not strictly necessary in the treatment of this disorder.

Sexual Neurasthenia in Men.—Albert J. Underhill concludes from a study of this subject that sexual neurasthenia is always due to definite pathological conditions in the genitourinary tract, the lesions being found in any portion of this tract. This type of neurasthenia is most apt to arise from changes in the prostatic urethra, especially in the vicinity of the verumontanum, because of the exceptionally rich supply of sensory nerve endings in this part. The conditions give rise primarily to a local neuritis or neuralgia which is the intermediate cause of the neurasthenia. In certain instances there may be a toxic element, as in infections of the seminal vesicles or prostate, which impairs the resistance of the sympathetic nervous system. This condition is most often found in those of hereditary or acquired neuropathic disposition. The physical impotence resulting in many of these cases acquires a psychic element in the course of the disease, which must be treated as a separate factor after the primary cause has been removed.

The Staphylococcus Spray Treatment of Diphtheria Carriers.—A. M. Alden suggests the use in a spray of a composite culture of equal portions of three different strains of *Staphylococcus pyogenes aureus,* isolated from throat cultures, grown on agar, and afterward transferred to broth. He states that no patient who has had diphtheria should be released from quarantine until at least two negative cultures are obtained from both nose and throat and the ear if symptoms are present. Antitoxine will not free the patient from the carrier condition, but some local application is necessary to clear the throat and nose of *Bacillus diphtheriæ.* In fifteen out of sixteen cases the staphylococcus spray effectively cleared the throat of *Bacillus diphtheriæ* after other methods had failed, and that without harm to the patient.

MEDICAL RECORD

June 14, 1913.

Observations of Results from Vaccination against Tuberculosis.—Charles A. Julian recalls the experiments of Karl von Ruck, who states to have discovered and perfected a method of prophylactic immunization, absolutely safe, uniformly efficient and simple in its application by a single dose (see this JOURNAL, September 14, 1912, page 550). It has been found that this method of protective vaccination is not only effectual in individuals free from infection, but in those with demonstrable tuberculous changes in the lymph glands, lungs, and other organs. In nontuberculous children no reaction to the vaccination is noticed; neither was there anything observed in their after-condition which was at all referable to it. The writer, associated with Silvio von Ruck, made a critical examination of those whose record showed the presence of tuberculous infection of the lungs, the lymph glands, and other tuberculous localizations, prior to their vaccination. These cases showed a complete disappearance of the physical signs, or at least a retrogression, and with few exceptions, a marked increase in bodily weight. In all but a few of the advanced cases the local and general improvement was so marked that an apparent recovery, or at least a complete arrest, could have been accepted. As an exception were three cases which, in addition to pulmonary infection, other tuberculous complications were present—tuberculous peritonitis which demanded a laparotomy for the evacuation of a purulent exudate; tuberculous disease of the right tibia requiring incision and drainage; Pott's disease—the patients were treated with the vaccine until they completely recovered. In the early stages, however, a single dose was sufficient to bring about a chemical cure.

Roentgenoscopic Examinations versus Clinical Methods in the Diagnosis of Gastric Disease.—John D. Dunham, basing his observations upon a study of ninety-four patients who complained of gastric or intestinal symptoms, concludes that bismuth is the most satisfactory contrast substance yet employed, because it leaves the stomach very slowly. In cases of clinical gastric ulcer the failure of the pyloric region of the stomach to assume its symmetrical contour with the Röntgen meal is strongly presumptive of stenosis. In determining the early steps of pyloric stenosis the emptying time of the Röntgen meal is of no value. Lavage at varying times after meals is the only test of this condition. The fluoroscopic method is the only reliable method of diagnosticating hourglass contraction of the stomach. Careful and prolonged study must be made if errors are to be avoided. In this differential diagnosis of motor insufficiency caused by atony and that produced by advanced pyloric stenosis, fluoroscopy offers great aid. Clinically, similar symptoms with a reduced hydrochloric acidity is found in both. By the present Röntgen method the degree of motor insufficiency and atony cannot be determined. Röntgenoscopy of the stomach gives no more exact results than percussion, as deductions must be made from shadows, but when employed by the clinician himself as one of his own clinical aids, the best results in gastric diagnosis will be attained.

Glycosuria and the Bulgarian Bacillus.—S. H. Blodgett reports three cases of glycosuria, all of the same type, all under treatment at the same time, and all receiving practically the same diet. Two of these received the Bulgarian bacillus (one in addition received daily doses of sodium bicarbonate) and one of these received the same diet, but no medicine. The two who received the Bulgarian bacillus died, although death was not probably due to the bacillus. However, the Bulgarian bacillus was apparently of no benefit.

The Present Status of the Tuberculin Tests.—Charles B. Slade bases his observations on the study of some thousand or eleven hundred cases in which the Calmette and von Pirquet tests were made at the Otisville Sanatorium. The Calmette test was used in about six hundred or seven hundred cases. The patients were all over five years of age. The writer concludes that the Morro test, from a clinical point of view, is so entirely unreliable that its application is a waste of time. The subcutaneous injection of tuberculin is, scientifically, the most reliable, although clinically it is not absolutely

reliable, even when negative. In a considerable number of cases severe reactions are unavoidable. They may, and do in some cases, cause irretrievable harm, making this method unjustifiable as a diagnostic routine. The Calmette test, when applied with constant care in the choice of cases, is probably harmless, but since injury to the eye may result, and since it has no advantage over the von Pirquet test, it should not be employed as a diagnostic routine. The von Pirquet test is harmless and without objection as a diagnostic routine, although it is of very little practical value beyond the age of four years. The subcutaneous injection of tuberculin for diagnosis is justifiable where the diagnosis cannot be made by any other means, and yet, in the patient's interests, a certain diagnosis is imperative, especially applying to disease of the joints when the focal reaction can be more easily observed. Broad judgment should lead us to determine not so much whether or not a person has tuberculosis, but whether or not his tuberculosis has become a *disease* clinically.

ARCHIVES OF DIAGNOSIS

April, 1913.

Chronic Appendicitis versus Duodenal Ulcer, and Their Association.—J. B. Deaver refers to the fact that where in chronic appendicitis pylorospasm exists and pain is referred to the epigastrium, this, together with the various attendant digestive disorders, makes a clinical distinction from duodenal ulcer almost impossible. The symptoms of indigestion, however, are never present to such an extent or are as constant in chronic appendicitis as in ulcer. In the former condition, moreover, constipation is usually present. The seats of tenderness and of muscular rigidity or resistance are also typically different, while in some cases of duodenal ulcer a mass may be palpated. In chronic appendicitis the blood picture does not vary much from the normal, while in ulcer, if hemorrhage has occurred, a fall in hemoglobin and erythrocyte count will be noted. On the whole, the laboratory tests do not assist to any extent in differentiating chronic appendicitis and a typical duodenal ulcer. Deaver has met with many cases of associated chronic appendicular disease and ulcer and concludes that infection transmitted by the blood or lymph streams is responsible for this association. The case of chronic appendicitis should be seen by the surgeon early, when appendectomy will give relief and probably sometimes prevent subsequent duodenal disease resulting in ulceration.

Auscultation at the Acromion Process.—R. Abrahams carefully adapts the bell of the stethoscope over the acromial end of the clavicle and frequently also over the acromion process, and proceeds with an investigation of the usual respiratory physical signs. Bearing in mind that, normally, the right apex is characterized in auscultation by bronchovesicular breathing, a distinctly heard spoken voice and a clear whispered sound, while the left apex yields vesicular breathing, an indistinct spoken voice and a muffled whisper, one finds that in case of a very early pathological infiltration at the right apex, acromial auscultation will yield an appreciable, prolonged expiratory sound, a louder spoken voice, and a slightly increased whisper. These changes may not be audible at all through direct auscultation over the apex at the time; the former procedure thus giving the first warning of disease. In incipiency at the left apex acromial auscultation will elicit markedly bronchovesicular breath sounds and an increase in voice and whispered sounds. First stage tuberculosis, upon acromial examination, yields signs which, when found over lung tissue, would indicate absolute consolidation. The method is thus useful for the early detection of tuberculosis. It is also especially valuable in the case of a tuberculous focus lodged under or behind a clavicle, and in revealing crepitant, subcrepitant, mucus, or sibilant râles when these either are missed when the stethoscope is held over the apices, or are indistinct.

Lymphuria.—H. Stern reports two cases of a condition he terms lymphuria, viz., an intermittent albuminuria due to the presence of lymph in the urine, without any evidence of structural renal disease, and which may be recognized by the absence of a demonstrable globulinuria and the presence of rather numerous young lymphocytes. The patients were, respectively, a young woman twenty-three years old and a man forty-four years old. Stern points out channels through which lymph may reach the urine. He believes the condition described results from an obstruction of colonic or mesenteric lymphatics through some faulty posture, lordosis, colonic atony, compression, or other mechanical factor. In the cases described there was slight intestinal disturbance and a tendency to constipation.

Simulation by Malaria of Acute Surgical Abdominal Disease.—W. M. Brickner calls attention to the possibility of treating by mistake as appendicitis a malarial seizure. He reports cases illustrating the fact that abdominal pain, localized in the right iliac region, with distinctly localized and marked tenderness, may occur in malaria. A case previously reported by Henson indicated that there may even be rigidity. The blood count is not diagnostic, since leucocytosis may be absent in appendicitis or, as in two of the author's cases, present in malaria. The plasmodia may be absent in malaria at the time of observation, or examination for them may be overlooked. Under these conditions the "sizing up" of a case in the light of experience—study of the facial and "abdominal expression" and evaluation of signs, symptoms and anamnesis—is the sole distinguishing feature.

Parapsoriasis.—W. S. Gottheil enumerates as the chief characteristics differentiating it from psoriasis, eczema, and seborrhea: 1. Appearance as sharply limited papules or larger patches of a pale pinkish color, entirely without infiltration, with no signs of inflammation in the form of acuminate papules or vesicles, and with a slight furfuraceous desquamation; 2. slow peripheric growth, without itching, and of extreme chronicity; 3, recalcitrance to all ordinary treatment for eczema, psoriasis, or seborrhea. In the treatment the author uses a three to eight per cent. betanaphthol ointment in simple cerate, or the liquor carbonis detergens of the *British Pharmacopœia*. The surfaces are also exposed to the x ray for short periods at frequent intervals.

Standard Color Test for Indican.—R. T. Edes advises that instead of using the terms "a little,"

"a small amount," or symbols such as 0, +, ++, +++, to express the intensity of color resulting in the ordinary test for indican, a standard consisting of a solution of indigotin in definite dilutions be employed. The ten dilutions, ranging from 1 : 100,000 to 1 : 1,000,000, which will be the most used, may be marked Nos. 1, 2, 3, etc. The addition of liquor plumbi subacetatis to the urine before testing facilitates exact comparison with the finely graded standard.

Letters to the Editor.

ADRENAL PREPARATIONS IN SNAKE BITE.

San Antonio, Tex., *June 9, 1913.*

To the Editor:

Remembering what Sajous has to say in *Internal Secretions* concerning the secretion of the suprarenal capsules in immunity, I thought your readers would be interested in my experience in a case of rattlesnake bite.

The young man was brought from the country bitten by a large rattler and was in a condition of profound prostration, with rapid and feeble heart action, pulse somewhat irregular, temperature 96° F., vomiting frequently, restless, and delirious. I used adrenalin freely, and in a very short time was rewarded by a reaction. The pulse came down and grew stronger, blood pressure rose, temperature came up to the normal and a little above, the vomiting ceased, and altogether the general condition was such within two hours that I could see that the first results of the poison were under control. This was quite remarkable to me in the face of an extremely dangerous condition. Of course, there was the typical swelling and severe inflammation, but besides overcoming shock, the adrenalin seemed at once to arrest the poisonous action of the venom upon the organism at large.

I am wondering what the result would be of the hypodermic use of adrenalin directly into the poisoned parts, and certainly would use it if opportunity offered for immediate attention. J. S. Lankford, M. D.

CORRECTION.

30 East Forty-second Street,
New York, *June 17, 1913.*

To the Editor:

In my article, "Gonorrhea from a Pathological Standpoint," published in your Journal of June 14, 1913, there is a typographical error. On page 1221, near the bottom of the first column, appears the following: "More than once has it been my pleasing experience to convince a patient (who though himself infected with gonorrhea) that his discharge was the result of a chemical or bacterial inflammation."

The sentence should be, "More than once has it been my pleasing experience to convince a patient (who thought himself infected with gonorrhea) that his discharge was the result of a chemical or bacterial inflammation."

Will you kindly let correction appear in the next issue?

Geo. A. Wyeth, M. D.

Book Reviews.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

The Psychological Origin of Mental Disorders. By Paul Dubois, M. D., Professor of Neuropathology in the University of Berne, etc. Authorized Translation by Edward G. Richards, M. B., A. M., Edinburgh. New York and London: Funk & Wagnalls Company, 1913. Pp. 87. (Price, 50 cents.)

The major part of this small volume is devoted to a historical review of the views of psychiatrists regarding the influence of psychic factors in the causation of mental disorders; the author's own conceptions of the subject are definitely stated only in the last few pages of the book. Accepting neither the somatic conception of psychoses, which would explain all insanities on the basis of deranged physical conditions, nor yet the psychological conception which regards only the psychogenic factors, Dubois looks upon the psychopathies as products of "the action of numerous factors, both physical and mental, operating, according to the case, either separately or in combination." But, as the most important prerequisite for their development, he assumes for each case a "primitive mentality" containing some inherent mental defect which may or may not cause a breakdown depending upon environmental conditions. In treating these psychopaths "we are urgently called upon," he says, "to consider, before everything, the *primitive mentality* of the subject and to correct it by a true *intellectual and moral education.*"

Nervous and Mental Diseases. For Students and Practitioners. By Charles S. Potts, M. D., Professor of Neurology in the Medico-Chirurgical College of Philadelphia, Neurologist to the Philadelphia Hospital, etc. Third Edition, Revised and Enlarged. Illustrated with 141 Engravings and Six Plates. Philadelphia and New York: Lea & Febiger, 1913. Pp. viii-610. (Price, $2.75.)

The last edition of this popular manual of nervous and mental diseases not only includes all of the excellent features of the previous editions, but is notably enlarged and improved, insuring it the continued reputation of being one of the most concise and dependable books of its class available to the student and general practitioner.

Essays and Clinical Studies. By F. G. Crookshank, M. D., London. London: H. K. Lewis, 1911. Pp. vii-245.

For the admirer of Doctor Crookshank's writings this collection of some of his essays on various objects will be welcome. The articles bear witness to the large field of science which is covered by the broad mind of the author.

Official News.

United States Public Health Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ending June 18, 1913:

Foster, M. H., Surgeon. Granted one month's leave of absence from June 24, 1913. **Guiteras,** G. M., Surgeon. Granted one month's leave of absence from July 1, 1913. **Herrick,** A. W., Acting Assistant Surgeon. Granted thirty days' leave of absence, without pay, from June 15, 1913. **Lumsden,** L. L., Surgeon. Directed to attend a conference of State health officers at Lawrence, Kans., June 24th and 25th, and deliver addresses upon the epidemiology and prevention of typhoid fever. **Parker,** T. F., Acting Assistant Surgeon. Granted thirty days' leave of absence from June 1, 1913. **Schereschewsky,** J. W., Surgeon. Detailed in connection with investigations of trachoma in Tennessee to present a series of lectures on public health to teachers and educational workers in attendance at the University of Tennessee, Knoxville, Tenn.

Boards Convened.

Boards of medical officers convened for the physical examination of candidates for appointment to cadetships in the Revenue Cutter Service, to meet June 23, 1913, as follows: Bureau, Washington, D. C., Assistant Surgeon General W. J. Pettus, chairman; Assistant Surgeon R. A. Kearny, recorder. Marine Hospital, Detroit, Mich., Senior Surgeon H. W. Austin, chairman; Surgeon M. J. White, recorder. Marine Hospital, Stapleton, N. Y., Senior Surgeon G. W. Stoner, chairman; Passed Assistant Surgeon W. M. Bryan, recorder. Marine Hospital, Chelsea, Mass., Senior Surgeon Fairfax Irwin, chairman; Surgeon H. W. Wickes, recorder. Marine Hospital, Baltimore, Md., Senior Surgeon H. R. Carter, chairman; Passed Assistant Surgeon J. T. Burkhalter, recorder. Marine Hospital, San Francisco, Cal., Surgeon R. M. Woodward, chairman; Passed Assistant Surgeon J. R. Hurley, recorder. Marine Hospital, Chicago, Ill., Surgeon J. O. Cobb, chairman;

Passed Assistant Surgeon Hugh de Valin, recorder. Marine Hospital Office, 410 Chestnut Street, Philadelphia, Pa., Surgeon W. G. Stimpson, chairman; Passed Assistant Surgeon Norman Roberts, recorder. Marine Hospital, Savannah, Ga., Surgeon C. H. Lavinder, chairman; Passed Assistant Surgeon R. M. Grimm, recorder. Newbern, N. C., Acting Assistant Surgeon R. S. Primrose, chairman; Acting Assistant Surgeon R. D. Jones, recorder.

Board of medical officers convened to meet at the Marine Hospital, Detroit, Mich., at the call of the chairman, for the reexamination of an alien. Detail for the board: Surgeon M. J. White, chairman; Acting Assistant Surgeon K. L. Weber, recorder.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending June 21, 1913:

Ashburn, Percy M., Major. Relieved from further duty in the Philippine Department, and will proceed on the first available transport to San Francisco, thence to Ancon, Canal Zone, for the purpose of establishing a board of medical officers for the purpose of studying tropical diseases as they exist in Panama. **Bartlett,** William K., Captain. Relieved from duty at Fort Oglethorpe, Ga., to take effect on or about July 1, 1913, and will then proceed to Fort Ethan Allen, Vt., for duty. **Bevans,** James I., Major. Relieved from duty as medical superintendent, Army Transport Service, attending surgeon, San Francisco, and as surgeon, Fort Mason, Cal., and will report to the commanding general, Western Department, for duty with station at San Francisco, until further orders. **Brown,** Ira C., First Lieutenant, Medical Reserve Corps. Granted leave of absence for four months. **Byrne,** John G., First Lieutenant, Medical Reserve Corps. Resignation of commission as an officer in the Medical Reserve Corps of the United States Army accepted by the President, to take effect June 12, 1913. **Card,** Daniel P., Captain. Relieved from duty at Fort Ethan Allen, Vt., to take effect on or about July 1, 1913, and will then proceed to West Point, N. Y., and report in person to the superintendent of the United States Military Academy for duty, relieving Captain Galvin D. **Cowles,** Jr., who, upon being thus relieved, will proceed to Fort Clark, Texas, and report to the commanding officer of that post for duty. **Darling,** Thomas, First Lieutenant, Medical Reserve Corps. Ordered to active duty at the encampment at Gettysburg, Pa., June 28 to July 10, 1913. **DeLaney,** Matthew A., Major. Relieved from duty as attending surgeon in Washington, D. C., and will comply with instructions contained in letter from the Adjutant General's office dated March 20, 1913, and upon the completion of this duty, will proceed to San Francisco, Cal., and take the first available transport from the Philippine Islands for duty. **Dunbar,** L. R., Captain. Reports sick in Letterman General Hospital, June 13th. (Under orders to United States Military Prison, Fort Leavenworth, Kansas.) **Ebert,** R. G., Colonel. Appointed an instructor at the militia camp, Santa Cruz, California, July 6 to 16, 1913. **Fetterolf,** D. W., First Lieutenant, Medical Reserve Corps. Left medical supply depot, New York, on June 14th, on leave of absence for one month. **Hansell,** Haywood S., Captain. In addition to his other duties, will report to the commanding officer, Fort Mason, Cal., for duty as surgeon at that post. **Heysinger,** James D., Captain. Leave of absence heretofore granted is extended five days. **Kraker,** Davis A., First Lieutenant, Medical Reserve Corps. Ordered to active duty in the service of the United States on account of an existing emergency for the period from June 28 to July 10, 1913; will proceed on or after June 28th to Gettysburg, Pa., and report for duty with the provisional field hospital at the camp to be established at that place, and will return to his home by July 10, 1913, and stand relieved from active duty in the Medical Reserve Corps. **Kilbourne,** Edwin D., Captain. Relieved from duty at Columbus Barracks, Ohio, to take effect upon the expiration of the leave of absence heretofore granted him, and will then proceed to Fort Oglethorpe, Ga., and report in person to the commanding officer of that post for duty. **Le Hardy,** Julius C., First Lieutenant, Medical Reserve Corps. Relieved from duty at Fort Ward, Wash., to take effect upon the arrival at that post of First Lieutenant Charles H. Stearns, Medical Reserve Corps, and will then proceed to Benicia Arsenal, Benicia, Cal., and report in person to the commanding officer of that arsenal for duty. **Lyster,** Theodore C., Major. Leave of absence extended one month. **Meister,** William B., First Lieutenant. Will proceed to Fort Benjamin Harrison, Ind., for temporary duty, and after the completion thereof will proceed to Fort Davis, Alaska, as heretofore ordered. **Page,** Henry, Major. Left Fort Moultrie, S. C., June 14th, on four months' sick leave, with permission to go beyond the sea. **Poust,** Luther R., First Lieutenant. Paragraph 15, Special Orders No. 67, March 22, 1913, so amended as to relieve him from temporary duty in the Southern Department and from duty at Fort Riley, Kansas, to take effect upon the arrival of First Lieutenant Clarence R. Bell, Medical Reserve Corps. **Quade,** O. H., First Lieutenant. At expiration of sick leave will report at the United States Military Prison, Fort Leavenworth, Kansas, for duty. **Ragan,** Charles A., Major. Relieved from duty at the Walter Reed General Hospital, District of Columbia, to take effect on or about July 1, 1913, and will proceed to Fort Oglethorpe, Ga., for duty. **Waring,** J. B. H., Captain. Left Army and Navy General Hospital, Hot Springs, Ark., June 10th, on sick leave of absence. **Whitham,** J. D., Lieutenant. Returned to Fort Monroe, Va., June 19th, from temporary duty at Fort Howard.

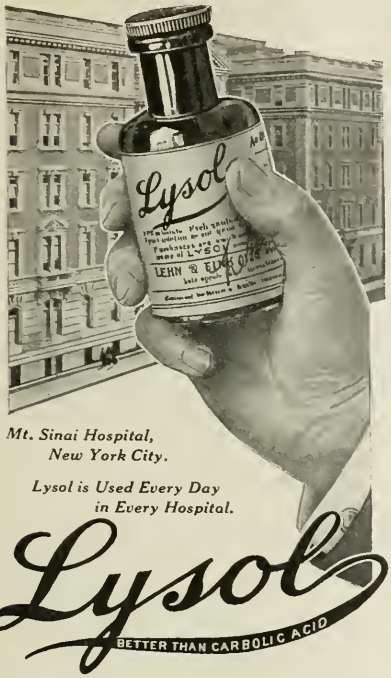
Births, Marriages, and Deaths.

Married.

Bowers—Page.—In Newton, Mass., on Wednesday, June 18th, Dr. George Francis Haskell Bowers and Miss Irene Durant Page. **Closson—Ely.**—In Lambertville, N. J., on Wednesday, June 11th, Dr. Edward W. Closson and Miss Caroline Gertrude Ely. **Gill—Corsbie.**—In Hartsells, Ala., on Wednesday, June 11th, Dr. Joseph C. Gill and Miss Lucy A. Corsbie. **Harrington—Evans.**—In Bangor, Me., on Wednesday, June 11th, Dr. Daniel J. Harrington, of Dorchester, Mass., and Miss Madeline Keyes Evans. **Martin—Anderson.**—In Scranton, Pa., on Monday, June 9th, Dr. Thomas P. Martin, of Mayfield, Pa., and Miss Phoebe Anderson. **Pratt—MacKenzie.**—In Brookline, Mass., on Monday, June 16th, Dr. Edward L. Pratt, of New York, and Miss Annabel MacKenzie. **Tompkins—Killgore.**—In Flemington, N. J., on Tuesday, June 10th, Dr. Grenelle Bertram Tompkins and Miss Jane Dunham Killgore.

Died.

Brinkley.—In Savannah, Ga., on Monday, June 16th, Dr. Guy O. Brinkley, aged forty years. **Caverly.**—In Trenton, Ontario, on Sunday, June 8th, Dr. McLean L. Caverly, aged fifty-five years. **De Nike.**—In Clinton, N. Y., on Friday, June 13th, Dr. George H. De Nike. **Hartley.**—In New York, on Thursday, June 19th, Dr. Frank Hartley, aged fifty-six years. **Howe.**—In Stamford, Conn., on Thursday, June 12th, Dr. Harmon G. Howe, of Hartford, aged sixty-two years. **Jenkins.**—In Evanston, Ill., on Sunday, June 15th, Dr. J. R. Jenkins, aged seventy-one years. **Manchester.**—In Pittsburgh, Pa., on Friday, June 13th, Dr. Llewellyn C. Manchester, aged fifty years. **Meriwether.**—In Asheville, N. C., on Thursday, June 12th, Dr. Frank Tyron Meriwether, aged forty-seven years. **Mills.**—In Arcata, Cal., on Tuesday, June 10th, Dr. Charles Wesley Mills. **Phelps.**—In Glens Falls, N. Y., on Saturday, June 14th, Dr. Albert H. Phelps. **Scully.**—In Colorado Springs, Colo., on Monday, June 16th, Dr. Daniel J. Scully, of Brooklyn, N. Y., aged thirty-eight years. **Sellards.**—In Deerfield, Mich., on Friday, June 13th, Dr. George H. Sellards. **Smith.**—In Lebanon, Pa., on Sunday, June 8th, Dr. August Stoner Smith, aged seventy-three years. **Van Heusen.**—In New York, on Monday, June 16th, Dr. Richard Fletcher Van Heusen, aged forty-six years. **Williams.**—In Philadelphia, on Tuesday, June 17th, Dr. Wingo Williams, of Fort Worth, Texas.



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DR. BRUSH'S KUMYSS

Miscellany.

Official Supervision of Immunization with Living Bacteria.—When the exploitation of the so called Friedmann cure for tuberculosis in this country was imminent, in the early part of this year, remarks the *Weekly Bulletin of the Department of Health of the City of New York,* May 31, 1913, the Board of Health of this city became convinced, after due investigation of the story and claims and promises of the discoverer, that, while the presumption and the existing evidence were largely against the fulfillment of the assertions which were so freely made for it, it was still not wise or practicable, in view of the widespread hope of benefit which had been aroused among the victims of this disease, to interfere at the moment with the use of the remedy, provided no evidence was to be adduced of the harmfulness of the living cultures which it was proposed to administer.

Such evidence was not at the time at hand, and, while the testimony as to the efficiency of the remedy from German observers was not at all encouraging, it was felt that a fair scientific test might wisely be given to the method. Under these conditions, although the Board of Health felt that it would not be wise or practicable for it to assume the supervision of such a series of tests, it welcomed the assumption of this task by the federal authorities who had placed the matter in the hands of accomplished and experienced medical officials.

The unusual publicity which has accompanied the introduction of this particular remedy and the large number of patients who applied for treatment threatened to bring about a general pilgrimage of sufferers from tuberculosis to New York city, and thus presented a new and acute problem to the Board of Health which already had grave doubts whether the department charged with the protection of public health should permit the general use of treatments by new and untried vaccines until evidence of their entire harmlessness had been produced. The progress of the study of this remedy by the government physicians was followed with interest, and the Board of Health finally drafted a general regulation providing for official supervision of such methods of treatment in the future. The entire subject was then presented to the Medical Advisory Board of the Department of Health at a meeting held Wednesday, May 28, 1913, at which the following members were present:

Dr. Joseph D. Bryant, chairman; Dr. T. Mitchell Prudden, secretary; Dr. Abraham Jacobi, Dr. Simon Flexner, Dr. A. Alexander Smith, Dr. John Winters Brannan, Dr. L. Emmett Holt, Dr. Walter B. James. The following officials of the Board of Health were also present: Ernest J. Lederle, Ph. D., commissioner; Dr. Joseph J. O'Connell, health officer of the port; Dr. Hermann M. Biggs, general medical officer; Dr. William H. Park, director of laboratories; Dr. Charles B. Slade and Dr. Luther B. MacKenzie. Other physicians present by special invitation were: Dr. James Alexander Miller of Bellevue Hospital, Dr. Maurice Fischberg of the Montefiore Home, Dr. Alfred Meyer of Mt. Sinai Hospital, Dr. Alfred G. Gerster of Mt. Sinai Hospital, Dr. N. E. Brill of Mt. Sinai Hospital, and Dr. Livingston Farrand, executive secretary, National Association for the Study and Prevention of Tuberculosis.

On May 29, 1913, the Board of Health adopted the following resolution in the form approved by the Medical Advisory Board:

Whereas, In the judgment of the Board of Health, the use of living cultures of bacteria in the inoculation of human beings, for the prevention or the treatment of disease, may be fraught with serious danger to the individuals and to the public health, and

Whereas, The necessity and the harmlessness of such a procedure can be safely determined only by carefully planned and controlled and unbiased scientific measures and observations, and

Whereas, Certain tests of the efficiency and safety of an alleged cure for tuberculosis now being made in this city are being rendered unsatisfactory, unscientific, and practically futile through the insistence of the originator of the alleged remedy on conditions which involve inadequate observation, inaccurate methods of administration, and the insistence on secrecy regarding the substance employed in some phases of the treatment, and

Whereas, Evidence is already at hand to show that the so called remedy not only does not fulfill the promises of efficiency and safety under which its use was at first permitted in this city, but, on the contrary, during its administration many patients have suffered serious and unduly rapid progress of their diseases; therefore, be it

Resolved, That the use of living bacterial organisms in the inoculation of human beings for the prevention or treatment of disease shall be and is hereby prohibited in New York city, until after full and complete data regarding the method of use, including a specimen of the culture and other agents employed therewith, and a full account of the details of preparation, dose, and administration shall have been submitted to the Board of Health, and until permission shall have been granted in writing by the board for the use of the same.

This resolution was embodied in the Sanitary Code as section 148a, the exact reading of which is as follows:

Section 148a. The use of living bacterial organisms in the inoculation of human beings for the prevention or treatment of disease is hereby prohibited until after full and complete data regarding the method of use, including a specimen of the culture and other agents employed therewith, and a full account of the details of preparation, dosage and administration shall have been submitted to the Board of Health of the City of New York, and until permission shall have been granted in writing by the said board for the use of the same.

New Publications Received.

Golden Rules of Diagnosis and Treatment of Diseases Aphorisms, Observations, and Precepts on the Method of Examination and Diagnosis of Diseases, with Practical Rules for Proper Remedial Procedure. By Henry A Cables, B. S., M. D., Professor of Medicine and Clinical Medicine of the College of Physicians and Surgeons, Consultant at Jefferson Hospital, etc. Second Edition, Revised and Rewritten. St. Louis: C. V. Mosby Company, 1913. Pp. 318. (Price, $2.25.)

Practical Guide to Diseases of the Throat, Nose, and Ear. For Senior Students and Junior Practitioners. By William Lamb, M. D., C. M., M. R. C. P., Honorary Surgeon to the Birmingham Ear and Throat Hospital. Third Edition. New York: William Wood & Co., 1913. Pp. xvi-352. (Price, $2.45.)

Surgery of the Lung. By C. Garrè, Professor of Surgery at the University of Bonn, and H. Quincke, formerly Professor of Medicine at the University of Kiel. Second Edition. With 114 Colored and Other Illustrations, and Two Colored Plates. Translated from the German by David M. Barcroft, M. D. New York: William Wood & Co., 1913. Pp. viii-271. (Price, $4.)

Studies in Smallpox and Vaccination. By William Hanna, M. A., M. D., D. P. H., Assistant Medical Officer of Health for the Port of Liverpool, Visiting Physician to the Port Isolation Hospital. New York: William Wood & Co., 1913. Pp. 52. (Price, $3.)

Surgery of the Eye. A Handbook for Students and Practitioners. By Ervin Török, M. D., Surgeon to the New York Ophthalmic and Aural Institute, Ophthalmic Surgeon to Beth Israel Hospital, and Gerald H. Grout, M. D., Assistant Surgeon to the New York Ophthalmic and Aural Institute, etc. With 509 Original Illustrations, 101 in Colors, and 2 Colored Plates. Philadelphia and New York: Lea & Febiger, 1913. Pp. x-507.

Abhandlungen über Salvarsan. Gesammelt und mit einer Vorrede und Schlussbemerkungen herausgegeben von Prof. Paul Ehrlich, wirkl. Geh. Rat, Direktor des Instituts für experimentelle Therapie. Band III. Mit 2 Tafeln und 40 Figuren im Text. München: J. F. Lehmann, 1913. Pp. 584.

The Elimination and Toxicity of Caffein in Nephrectomized Rabbits. By William Salant, Chief Pharmacological Laboratory, Division of Drugs, and J. B. Rieger, Assistant Chemist. Washington: Government Printing Office, 1913. Pp. 31. (United States Department of Agriculture, Bureau of Chemistry, Bulletin No. 166.)

Geschichte der Ohrenheilkunde. Von Dr. Adam Politzer, em. o.ö. Professor der Ohrenheilkunde an der Wiener Universität. Zwei Bände, von 1850-1911. Unter Mitwirkung bewährter Fachkräfte. Mit 29 Bildnissen auf 29 Tafeln. Stuttgart: Ferdinand Enke, 1913. Pp. xvi-484.

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